LAKE SUPERIOR BIBLIOGRAPHY:

A Compilation of References on the Aquatic Ecosystem

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Lake Superior Bibliography

Acres, H.G. Thermal Inputs to the Great Lakes 1968-2000. Niagara Falls, Ontario: Inland Waters Branch, Dept. of Energy, Mines and Reservoirs, Canadian Centre for Inland Waters; 1970; 93 pp.

Adams, Carl E. and R.D. Kregear. Sedimentary and Faunal Environments of Eastern Lake Superior. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1969: 1-20. (Proc. 12th Conf. Great Lakes Research).
Bottom sediment samples were collected at 63 stations in eastern Lake Superior in September 1968 to delineate the sedimentary and faunal environments and determine their interrelationships. Relationships are displayed graphically by organism frequency and percent composition of most taxa. A list of the predominant benthic faunal species found are presented.

Adams, Carl E. Variations in the Physico-Chemical Properties of Lake Superior. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1972. (Proc. 15th Conf. Great Lakes Research).
Long term changes and seasonal variations in some physical and chemical properties of Lake Superior were examined. Present and historical data comparisons were also made. Analysis of samples were completed by Adams in 1968 and 1969. Data showed no increases in concentration of dissolved constituents in Lake Superior. Three stations were sampled near Isle Royale.

Adams, Charles E. Jr. Summer Circulation in Western Lake Superior. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1970; Part II: 862-879. (Proc. 13th Conf. Great Lakes Research).
Surface drift observations and dynamic height method were employed to define the summer circulation pattern of western Lake Superior. Objectives were to establish the effectiveness of circulation as a mechanism for dispersal of dissolved and particulate materials. Adams found a clockwise rotating current around Isle Royale.

Adess, M.; R. Nelson; L. Schlottman and W. Parkos. A Study of Periphyton Organisms as Components of Lake Superior Plankton; 1971; Limresta Res. Report 2; pp. 1-20.

Agassis, L. Lake Superior: Its Physical Characteristics, Vegetation, and Animals. Boston, Mass.: Gould, Kendall and Lincoln; 1850.
An early explorers description of the Lake Superior region.

Alley, W.P. and C.F. Powers. Dry Weight of the Macrobenthos as an Indicator of Eutrophication of the Great Lakes. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1970: 595-600. (Proc. 13th Conf. Great Lakes Research).

American Society of Civil Engineers. Temperature Dynamics in Dimictic Lakes. J. of the Hydraulics Division; 1975; (1).

Anderson, D.V. and G.K. Rodgers. A Synoptic Survey of Lake Superior. Proc. 6th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1963: pp. 79-111.
The results of a 5 day synoptic survey of 1300 stations across Lake Superior produced maps showing surface, 50 foot and 100 foot temperature profiles of the lake.

Anderson, D.V. and G.K. Rodgers. A Synoptic Survey of Lake Superior. In: Proc. 6th Conf. Great Lakes Res.; 1963: 79-111.
In 1959, meteorlogical data was collected and water temperatures of Lake Superior.

Anderson, E.D. and L.L. Smith. Factors Affecting the Abundance of Lake Herring (Coregonus artedii Lesueur) in Western Lake Superior. Trans. Amer. Fish. Soc.; 1971; 100: 691-707.

Anderson, E.D. and L.L. Smith. A Synoptic Study of Food Habits of 30 Fish Species from Western Lake Superior; 1971. (Minnesota Agr. Exp. Sta. Tech. Bull. 491).

Andrew, R.W. Distribution of Taconite Tailings in the Sediments of Western Basin of Lake Superior: EPA; 1970; National Water Quality Lab Report.

Andrews, Stephen C.; Carl D. Wilson, Ralph G. Christensen and Donald S. Houtman. Impact of Non-Point Pollution Control on Western Lake Superior - Red Clay Project. Superior, Wisconsin: Douglas City Soil and Conservation District; 1976; 188 pp.
Various types of structural and non-structural measures to control soil erosion are evaluated to determine which controls sediment loss most effectively and is most cost effective.

Armstrong, F.A.J. and A. Lutz. PCB, Chlorinated Insecticides and Heavy Metals in Offshore Fish From Lakes Huron and Superior; 1975; Report on Freshwater Institute Study for Upper Great Lakes Reference Group, International Joint Commission.

Assel, R.A. Great Lakes Ice Cover, Winter 1972-1973. Detroit, MI: Lake Survey Center; 1973.

Assel, R.A. Great Lakes Ice Cover, Winter 1973-1974. Detroit, MI: Lake Survey Center; 1974.

Assel, R.A.; D.E. Boyce; B.H. DeWitt; J. Wartha and F.A. Keyes. Summary of Great Lakes Weather and Ice Conditions, Winter 1977-78; 1979; NOAA Tech. Memo ERL GLERL-26.

Assel, Raymond A. Lake Superior Bathythermograph Data, 1973-1979. Ann Arbor, MI; 1983; 17 pp. (National Oceanographic and Atmospheric Adm. Env. Res. Lab). Publication is primarily tables of bathythermograph data.

Assel, Raymond A. Lake Superior Cooling Season Temperature. In: Proc. 28th Conf. Great Lakes Research-Program and Abstracts; June 3-5, 1985; Univ. of Wisconsin-Milwaukee. Internat. Ass. Great Lakes Res.; 1985. Temperature surveys were made across Lake Superior in the winter of 1973-1976 and fall of 1976-79 to document the fall and winter temperature characteristics of the lake. Maximum temperature in the surface layer occurred in latter August and ranged from 13-20 C. Minimum occured in early March and ranged from 0.3-1.5 C. Maximum temperature in the 90-100 meter layer varied from 4.6-5.7 C in mid November to a minimum of 0.7-2.8 in late January to late March.

Atmospheric Environment Service. Monthly and Annual Evaporation From the Great Lakes Bordering Canada. Downsview, Ontario: Hydrometeorology Applications Div.; 1977.

Auer, Martin T.; James M. Graham; Linda E. Graham and James A. Kranzfelder. Factors Regulating the Spatial and Temporal Distribution of Cladophora and Ulothrix in the Laurentian Great Lakes. In:: Robert G. Wetzel, Editor. Periphyton of Freshwater Ecosystems. Boston, MA: Dr. W. Junk Publishers; 1983; 345 pp.
The role of light, temperature and phosphorus supply in regulating geographic, seasonal and spatial distribution of two filamentous green algae, Ulothrix zonata and Cladophora glomerata in the Great Lakes was investigated. Cladophora was found to be a common component of the periphyton community in streams and near stream mouths, but absent in the littoral zone of Lake Superior. Ulothrix, rather than Cladophora was the dominant littoral filamentous algae in Lake Superior in sites receiving significant phosphorus enrichment. Field observations suggest that the dominance of Ulothrix in the littoral zone is attributed to a lower temperature tolerance than Cladophora.

Ayers, J.C. Great Lakes Waters, Their Circulation and Physical and Chemical Characteristics. H.J. Pincus, Ed.; 1962; Great Lakes Basin, AAAS Publication 71: 71-89.

Bahnick, D.A. and T.P. Markee. Transport of Toxic Substances into Lake Superior By Suspended Solids. Superior, WI: Univ. of Wisconsin; 1983.

Bahnick, Donald A. The Contribution of Red Clay Erosion to Ortho-Phosphate Loadings into Southwestern Lake Superior. J. Env. Qual.; 1977; 6(2): 217-222.
The effects of the erosion of red clay deposits along the northwestern Wisconsin shoreline area on orthophosphate inputs into Lake Superior were investigated.

Bahnick, Donald A. and Thomas P. Markee. Occurrence and Transport of Organic Microcontaminants in the Duluth-Superior Harbor. J. Great Lakes Research; 1985; 11(2): 143-155.
A large number of organic compounds were found in sediments and suspended solids from St. Louis Bay in Duluth Harbor. Most organic compounds were naturally occuring plant decomposition products, but PCB and PAH were also detected.

Bahnick, Donald A.; Albert B. Dickas; Joseph W. Horton and Ronald K. Roubal. Hydrology of Wisconsin Lake Superior Drainage Basin: Western Sector. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1973; Proc. 16th Conf. Great Lakes Research: 484-491.
Authors measured physical and chemical parameters of the western sector drainage basin of Lake Superior. River waters all fell within normal pH ranges and tend to have low chemical oxygen demand. They are well oxygenated, phosphate and nitrate levels are normally low.

Bahnick, Donald A.; Joseph W. Horton; Ronald K. Roubal and Albert B. Dickas. Effects of South Shore Drainage Basins and Clay Erosion on the Physical and Chemical Limnology of Western Lake Superior. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1972; Proc. 15th Conf. Great Lakes Research: 237-248.
Study looked at chemical and geological parameters of Lake Superior waters in the extreme southwest edge of the lake (Douglas County, Wisconsin). Sampling was done over a wide range of conditions (clear to turbid). Results indicate that input of red clay into Lake Superior from rivers and shoreline erosion leads to higher values of many of the parameters.

Bahnick, Donald A.; T.P. Markee; C.A. Anderson and R.K. Roubal. Chemical Loading to Southwestern Lake Superior From Red Clay Erosion and Residue. J. Great Lakes Research; 1978; 4(2): 186-193.
Inputs of chemical constituents were calculated from estimated erosion and resuspension data and experimental measurements in Lake Superior. Results indicate suspended sediment particles have a high capacity to remove copper and manganese from Lake Superior water.

Bahnick, Donald A.; Thomas P. Markee and Ronald K. Roubal. Chemical Effects of Red Clays in Western Lake Superior. Superior, Wisconsin: Univ. of Wisconsin Center for Lake Superior Env. Studies; 1979.
Investigation measured inputs of chemical constituents from clay particles in Lake Superior water as a function of time. A comparison was made in 1975 of chemical inputs from the shoreline in southwestern Lake Superior, sediment resuspension, and river particulate transport (Bayfield County, Wis).

Bahnick, Donald A.; Thomas P. Markee and Ronald K. Roubal. Note: Kinetics of Red Clay Bluff Dissolution in Western Lake Superior. J. Great Lakes Res.; 1979; 5(2): 221-224.
Dissolution of red clay bluff samples from south western Lake Superior were studied. The process used and results are described in the brief paper.

Bailey, M.M. Age, Growth and Maturity of Round Whitefish of the Apostle Islands and Isle Royale Regions, Lake Superior; 1963; US Fish and Wildlife Service Bull. 63; 63-75 pp.

Bailey, M.M. Age, Growth, Maturity and Sex Composition of the American Smelt, Osmerus Mordax, of Western Lake Superior. Trans. Amer. Fish. Soc.; 1964; 93: 382-395.

Bailey, M.M. Growth, Reproduction and Food of the Burbot, Lota Lota (Linneaus), in Southwestern Lake Superior. Trans. Amer. Fish. Soc.; 1972; 101: 667-674.

Baker, J.E. and S.J. Eisenreich. Transport of Chlorinated Hydrocarbons Across the Sediment Water Interface in Lake Superior. In: Proc. 28th Conf. Great Lakes Research-Program and Abstracts; June 3-5, 1985; Univ. of Wis.-Milwaukee. Milwaukee, WI: International Ass. Great Lakes Res.; 1985.
Settling and incorporation into sediments is a major loss of chlorinated contaminants in the Great Lakes. In western Lake Superior, formation of a benthic nepheloid layer, a layer of turbid water above the sediment-water interface, significantly impacted the water column burden of PCB's. Wave and sieche action in

the spring increase PCB burden in the water column by 50%.

Balcer, Mary D. The Planktivorous Feeding Behavior of Young Rainbow Smelt in Western Lake Superior. Proc. 26th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1983.

Baldwin, N.S. and R.W. Saalfeld. Commercial Fish Production in the Great Lakes 1867-1960: Great Lakes Fishery Commission; 1962; Tech. Report 3.

Ball, J. The Wisconsin 1974 Survey of Nearshore Lake Superior Waters: Wisconsin Dept. of Natural Resources; 1975; Report to Water Quality Board D-13.

Barlaz, Dora. Physical Characteristics of Sediments and Holocene Geological History of the Duluth-Superior Harbor, Lake Superior. Proc. 26th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1983.

Basch, R.E.; C.H. Pecor; R.C. Waybrandt and D.E. Kenaga. Limnology of Michigan Near Shore Waters of Lake Superior and Huron. Lansing, MI: Michigan Dept. of Natural Resources, Water Quality Div.; 1980. Limnological assessment including sediment chemistry, bacterial density, zooplankton, phytoplankton, and macroinvertebrate community structure and fish contaminants performed at 24 nearshore locations off the Michigan coast in 1974 and 1975. Statistical trend analysis showed significant increases in concentrations of dieldrin, DDT, and mercury in Lake Superior lake trout between 1974 and 1976.

Baumgartner, D.J. Clarity in Relation to Fine Particulate in Lake Superior: EPA; 1973; Studies Regarding the Effect of the Reserve Mining Co. Discharge on Lake Superior.

Baumgartner, D.J.; W.F. Rittall; G.F. Ditsworth and A.M. Teeter. Water Clarity in Relation to Particulate Matter in Lake Superior. Corvallis, Oregon: EPA; 1973; Pacific Northwest Env. Res. Lab. (11).

Beeton, A.M. Changes in the Environment and Biota of the Great Lakes. Washington DC: National Academy of Science; 1969; In: Eutrophication: Causes, Consequences, Correctives: 150-187.

Beeton, A.M. Eutrophication of the St. Lawrence Great Lakes. Limnol. Ocean.; 1965; 10: 240-254.

Beeton, A.M. and D.C. Chandler. The St. Lawrence Great Lakes. D.G. Frey, Editor. Limnology in North America. Madison, Wisconsin: Univ. of Wis. Press; 1966; 734 pp.

Beeton, A.M.; B.G. Torke; A.S. Brooks and J.A. Bowers. Influence of Energy-Related Effluents on Great Lakes Zooplankton: Interagency Commission on Marine Science and Eng.; 1975; Proc. Second Federal Conf. on Great Lakes: 432-437.
A very brief review of literature treating zooplankton associations, sampling, distribution, seasonal variation, food sources and research needs. Discussions are general for the entire Great Lakes ecosystem, with no particular attention to Lake Superior.

Beeton, Alfred M. and W.T. Edmondson. The Eutrophication Problem. J. Fish. Res. Board Canada; 1972; 29: 673-682.

Beeton, Alfred M. Light Penetration in the Great Lakes. Proc. 5th Conf Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1962; 9: 68-76.
Measurements of incident and subsurface light intensity at several depths were made in all 5 Great Lakes. Green light penetrated the greatest depth in Superior. Secchi disc depth was 2.7 meters in Lake Superior.

Beeton, Alfred M. Light Penetration in the Great Lakes. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1962; Publ. 9; pp. 68-76.

Beeton, Alfred M.; James H. Johnson and Stanford H. Smith. Lake Superior Limnological Data, 1951-1957: US Fish and Wildlife Service; 1959; 177 pp. (Special Scientific Report-Fisheries; 297).
Data was collected at stations all across Lake Superior in 1952-1953 and 1956-1957. Measurements of physical, chemical and biological characteristics of the lake were made on each cruise, including temperature, current by drift card, primary water chemistry, major ions and total standing crop of phytoplankton.

Bell, Gerald L. Eastern Lake Superior Chemical and Physical Characteristics Data for 1968. Ann Arbor, MI: Great Lakes Env. Research Lab; 1980; NOAA Data Report ERL GLERL-5; 10 pp. + data on microfiche.
Water samples at standard depths, bottom sediment and meteorological data were collected in eastern Lake Superior. Chemical characteristics of the water, wind, wave, and sediment data were analyzed and statistical summaries prepared.

Bell, Gerald L. Western Lake Superior Chemical and Physical Characteristics Data for 1969. Ann Arbor, MI: Great Lakes Env. Research Lab; 1980; NOAA Data Report ERL GLERL-6; 10 pp. + data on microfiche.
Water samples at standard depths, bottom sediment and meteorological data were collected in western Lake Superior. Chemical characteristics of the water, wind, wave, and sediment data were analyzed and statistical summaries prepared.

Belonger, B and R. Poss. Evaluation of Commerical Fishery Potential of Wisconsin's Boundary Waters of Lake Superior - Walleye. Madison, Wisconsin: Wisconsin Dept. of Natural Resources; 1971.
Walleye fish concentrations in western Lake Superior were sampled to determine commercial fishery potential. The study determined the potential to be low due to slow growth rate, long life span, and sport fishing pressures.

Bennett, E.B. Water Budgets for Lake Superior and Whitefish Bay. J. Great Lakes Research; 1978; 4: 331-342.

Bennett, Edward B. Characteristics of the Physical Limnology of Lake Superior Related to Area and Mean Depth; 1976; Unpub. manuscript; Canadian Centre for Inland Waters, Burlington, Ontario.

Bennett, Edward B. Characteristics of the Thermal Regions of Lake Superior. J. Great Lakes Research; 1978; 4((3-4)): 310-319.
Lake Superior was found to have low summer surface temperature and mean annual lake temperature, but high spring and annual heat incomes per unit area. These characteristics are associated with the great depth and width of the lake and relatively long periods of vertical mixing during spring and fall. The thermal regime has a strong influence on seasonal cycles in the vertical and horizontal distribution of currents. The thermal regime is also influenced by coastal and mid-lake upwellings.

Bennett, Edward B. Some Observations of Stratified Flow in Large, Thermally Stratified Lakes. Windsor, Ontario: International Joint Commission; 1976; Proc. of Intern. Joint Comm. Res. Adv. Board - The Dynamics of Stratification and Stratified Flow in Large Lakes; 200 pp.
Time series records of current flow and water temperature were obtained at 16 nearshore locations in Lake Superior over a period from late May to the beginning of October, 1973. Data showed that when the water column is homogeneous (spring), current speed is low, uniform with depth and constant over time. In the upper layer, there is nearly a linear relationship

between temperature and current speed, with speed lagging behind temperature by up to two weeks. The same relationship holds at deeper levels with greater lag. There is no indication of where the sampling was done.

Bennett, Edward B. Stability in the Hypolimnion of Deep Temperate Lakes. Burlington, Ontario: Canadian Centre for Inland Waters; 1976.

Bennett, Edward B. Thermally Driven Lake Currents During the Spring and Fall Transition Periods. Ann Arbor, MI: Intern. Ass. Great Lakes Research; 1971; Proc. 14th Conf. Great Lakes Res.: 535-544.

Bennett, Edward B. Water Budgets for Lake Superior and Whitefish Bay. J. Great Lakes Research; 1978; 4((3-4)): 331-342.
Average monthly and annual water budgets are presented for Lake Superior and Whitefish Bay. Annual over-lake rainfall, estimated from monthly maps is 93 percent of precipitation rate on land, but accounts for 51.5 percent of the total input of water. Diversions of water to Lake Superior have increased the mean rate of St. Mary's River discharge. Relatively high rainfall and land drainage to Whitefish Bay result in reduction of flow from the main body of Lake Superior, and in principle cause a significant difference between concentrations of material in the water of Lake Superior and that of water entering the St. Mary's River.

Benninghoff, W.S. and J.M. Franklin. Palynological Study of Postglacial Bottom Sediment From Deep Water Localities in Lake Superior: Institute of Lake Superior Geology; 1968; 14th Annual Tech. Session: 39-40.

Benninghoff, Wm. S.; Sylvia M. Taylor and Robert M. Dole. Pollen Analysis of Post-Glacial Sediments from Lake Superior. Ann Arbor, MI: Univ. of Michigan; 1968.
Fossil pollen spores were analyzed on a series of 3 cores in northwestern and southcentral Lake Superior. Results of analysis provide evidence of sediment history and processes within the lake.

Berg, R.E. Growth and Maturation of Chinook Salmon, Oncorhynchus Tshawytscha, Introduced Into Lake Superior. Trans. Amer. Fish. Soc.; 1978; 107: 281-283.

Berg, R.; R. Eschenroder and J. Kutkuhn. Third Report of the Ad Hoc Working Group to Assess Stocks of Lake Trout, Whitefish, Chubs and Lake Herring in Treaty Waters of the Upper Great Lakes - State of Michigan, Lake Superior. Ann Arbor, MI: US Fish and Wildlife Service, Great Lakes Fishery Lab; 1979.

Berkson, J.M. Possible Syneresis Origin of Valleys on the Floor of Lake Superior. Nature; 1973; 245: 89-91.

Berkson, J.M. and C.S. Clay. A Side Scan Sonar Study of the Morphology of Lake Superior Near Frede, Michigan. In: Geological Society of Amer. Annual Mtgs; 1970; pp. 493-494 (Abstract).

Berkson, J.M.; C.S. Clay. Microphysiography and Possible Iceberg Grooves in the Floor of Western Lake Superior. Geol. Soc. Amer. Bull.; 1973; 84: 1315-1328.

Bersinger, K.E.; J.M. McKim and M.M. Hohn. The Effect of Taconite Tailings on Productivity in Lake Superior: US EPA; 1973; Studies Regarding the Effects of the Reserve Mining Company Discharge on Lake Superior; pp 642-733.

Bierman, V.J. Jr. and Wayland R. Swain. Mass Balance Modeling of DDT Dynamics in Lakes Michigan and Superior. Env. Sci. and Tech.; 1982; 16(9): 572-579.
Authors looked for trends in data from previous studies on DDT levels in Lake Superior and Huron. Results show that DDT levels have declined in both lakes faster than expected based on degradation rates and hydraulic detention times.

Black and Veatch. Direct Filtration of Lake Superior Water for Asbestiform Fiber Removal. Kansas City, MO: US EPA; 1975; 119 pp.
Pilot plant research was conducted in 1974 at Duluth, Minnesota to demonstrate that asbestiform fiber counts in Lake Superior water could be reduced by municipal filtration systems. A series of appendices on specific topics or data are included as individual reports.

Bolsenga, S.J. Total Atmospheric Water Vapor Aloft Over the Great Lakes Basin. US Lake Survey, Army Corp. of Eng.; 1967; Research Report 5-3.

Bolsenga, S.J. Total Albedo of Great Lakes Ice. Water Resources Research; 1969; 5: 1132-1133.

Boyce, F.M. Some Aspects of Great Lakes Physics of Importance to Biological and Chemical Processes. Fish. Res. Board of Canada; 1974; 31: 689.

Brinkhurst, R.O.; A.L. Hamilton and H.B. Herrington. Components of the Bottom Fauna of the St. Lawrence Great Lakes. Toronto, Ontario: Univ. of Toronto, Great Lakes Institute; 1968; No. PR-33.

Brinkmann, W.A.R. Association Between Net Basin Supplies to Lake Superior and Supplies to the Lower Great Lakes. J. Great Lakes Research; 1983; 9(1): 32-39.
Eigenvector analysis was carried out on monthly basis over the entire Great Lakes basin for the period 1900-1973. The study showed that net basin supplies for Lake Superior are to a large degree uncorrelated with those from the lower three lakes. The paper discusses variations in eigenvector coefficients and changes in temperature and precipitation patterns over the Great Lakes region.

Brownlee, B. and W.M.J. Strachan, Canadian Centre for Inland Waters. Persistent Organic Compounds From a Pulp Mill in a Near-Shore Freshwater Environment. L.H Keith, Editor. In: Identification and Analysis of Organic Pollutants in Water. Ann Arbor, MI: Ann Arbor Science; 1976: 661-670.
A 25 kilometer section of Nipigon Bay was sampled for organic compounds entering Lake Superior from the Kraft Pulp Mill discharge. The discharge is a significant source of dehydroabietic acid, which enters the bay in particulate form. The study showed that the acid is quite persistent in the water column and found in surface sediments in significant amounts. Also persistent were palmitic acid and dioctyl phthalate.

Bruland, K.W.; M. Koide; C.Bowser; L.J. Maher and E.D. Goldberg. Lead 210 and Pollen Geochronologies in Lake Superior Sediment. J. Quat. Research; 1975; 5: 89-98.

Bryan, M.L. and R.W. Larson. The Study of Fresh-Water Lake Ice Using Multiplexed Imaging Radar. J. of Glaciology; 1975; 14(72): 445-457.
The study focused on newly formed black ice, pancake ice, frozen and consolidated pack and brash ice near Whitefish Bay in Lake Superior as well as other areas in the upper great lakes using side-looking multiplexed airborne radar.

Bukata, R.P.; J.H. Jerome; J.E. Bruton and E.B. Bennett. Note: Relationship Among Optical Transmission, Volume Reflectance, Suspended Mineral Concentration, and Chlorophyll a Concentration in Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 456-461.
A semi-empirical model is described where both the suspended inorganic and organic concentrations of a water mass may be determined by simultaneous measurements of the optical transmission and near-surface volume reflectance of the water column.

Predictions of the chlorophyll concentrations resulting from the optical model are compared with chlorophyll measurements taken from Great Lakes cruises. Excellent agreement was observed for the waters of Lake Superior.

Bumtz, Garth D.; David M. Jordan and Robert Waller. Characterization of Vessel Wastes in Duluth-Superior Harbor. Rockville, MD: Env. Quality Systems, Inc.; 1974.
Five wastes from the US, Canadian, and foreign commercial vessels were studied in Duluth-Superior Harbor in 1973. Wastes included bilge water, non-oily ballast water, sewage, garbage/refuse, and dunnage, all substantial pollution problems.

Bureau of Outdoor Recreation. Water Oriented Outdoor Recreation in the Lake Superior Basin (Michigan, Wisconsin, and Minnesota). Ann Arbor, MI: Michigan Lake Central Regional Office; 1970.
The report identifies specific areas where air and water pollution sources are interfering with recreational use and degrading the quality of the environment.

Callender, Edward. Chemistry of Lake Superior. Ann Arbor, MI: Univ. of Michigan; 1973. Unpub. manuscript.

Callender, Edward. Geochemical Characteristics of Lake Michigan and Lake Superior Sediments; Proc. 12th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1969: 124-160.
Sediment samples from Lake Michigan and Lake Superior were analyzed for bulk calcium, magnesium, iron, manganese, inorganic and organic carbon, total nitrogen and interstitial water for dissolved nutrients, metals and silica content. Data indicate Lake Superior sediment approaches saturation with calcite, but is undersaturated with respect to dolomite. Two of the stations are located near the southeast end of Isle Royale.

Canada Centre for Inland Waters. Preliminary Charts of Surface Distribution of Turbidity on Lakes Erie, Huron, Ontario and Superior, 1970. Burlington, Ontario; 1970.

Canadian Centre for Inland Waters. Limnological Data Report No. 1: Lake Huron and Lake Superior. Burlington, Ontario: Can. Oceanogr. Data Centre; 1968; 131 pp.

Capel, P.D. Water Column Dynamics of PCB's in Lake Superior. Minneapolis, MN: Univ. of Minnesota; 1983 MS Dissertation.

Capel, Paul D. and Steven J. Eisenreich. Chlorinated Hydrocarbons in Solid, Water, and Colloidal Fractions of a Duluth Harbor Sediment Sample. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
A detailed examination, using both field and lab measurements, was made on large sediment samples. Each fraction was analyzed for PCB's and chlorinated pesticides. The magnitude and implications of the distributions of the contaminants are discussed.

Capel, Paul D. and Steven J. Eisenreich. PCB's in Lake Superior, 1978-1980. J. Great Lakes Research; 1985; 11(4): 447-461.
PCB's were measured in the water column of Lake Superior during the summers of 1978-1980. Total PCB concentrations were relatively uniform throughout the water column within any one year. However, in 1979, elevated PCB concentrations were found and have been attributed to the previous winter's severe weather conditions and sediment resuspension.

Chan, C.H. A Description of the Temperature, Nutrient, Major Ion and Trace Metal Conditions in Lake Superior, 1968-1971. Burlington, Ontario: Canada Centre for Inland Waters; 1974; Unpub. Manuscript.

Chan, C.H. and L.H. Perkins. Lake Superior Wet Deposition. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
Wet deposition estimates were computed from monthly wet precipitation samples from Lake Superior. Wet deposition of sulphate and nitrogen were 22 and 55% of the total load, respectively.

Chandler, D.C. The St. Lawrence Great Lakes. Verh. Internat. Verein Limnol.; 1964; 15: 59-75.

Christie, W.J. Changes in the Fish Species Composition of the Great Lakes. J. Fish. Research Board Canada; 1974; 31: 827-854.

Coker, W.B. and W.W. Shilts. Lacustrine Geochemistry Around the North Shore of Lake Superior --Implications for Evaluation of the Effects of Acid Precipitation. In: Current Research, Part C: Geological Survey of Canada Paper 79-1C; 1979; p. 1-15.
Geochemical data from the north shore of Lake Superior show that natural variations in the chemistry of bedrock lithologies, mineralization, and glacial sediment composition can be used to determine the effects of acid precipitation. Concentrations of trace metals in lake waters and sediment vary considerably

and are affected by the underlying bedrock. Using concentrations of trace metals, it can be predicted which regions are sensitive to metal mobilization resulting from acidification of the terrain.

Cole, A.L. and R.C. Hiller. Wave Statistics for Lakes Michigan, Huron and Superior. Ann Arbor, MI: Univ. of Michigan, Dept. of Meteorology and Oceanogr.; 1970; Report 01498-1-F; 29 pp. + appendices.

Collins, Hollie L. Western Lake Superior Salmonid Diet Survey. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
Salmonid digestive tracts were collected from commercial and sport fishermen throughout the year from Duluth to Grand Porgae, MN. Food habits were determined separately by species, sex, size, season and location of collection. The percentage of occurrence and total volume for each food item was analyzed. Lake trout stomachs examined from May catches revealed a predominance of smelt as food and a low percentage of empty stomachs. By mid-June, lake trout switched to a diet chiefly of terrestrial insects and there was an increase in empty stomachs. The Pacific Salmon followed similar trends. Deep dwelling siscowet utilized predominantly sculpins.

Conway, J.B. The Distribution, Make-up, General Ecology and Biomass of the Zooplankton Population in Western Lake Superior [PhD Dissertation]: Univ. of Minnesota; 1973.

Conway, J.B. Seasonal and Depth Distribution of Limnocalanus Macrurus at a Site on Western Lake Superior. J. Great Lakes Research; 1977; 3(1-2): 15-19.
The life history stages of the relict Limnocalanus macrurus Sars were investigated at a site off the north shore of Lake Superior in 1971. L. macrurus contributed little to zooplankton biomass at 5 meters, but was the most important component of the zooplankton population at 40-50 meters.

Conway, J.B.; O.R. Ruschmeyer; T.A. Olson and T.O. Odlaug. The Distribution, Composition and Biomass of the Crustacean Zooplankton Population in Western Lake Superior. Univ. of Minnesota: Water Resource Res. Center; 1973; Bull. 63; 157 pp.
The purpose of the study was to determine the productivity and vertical, seasonal and horizontal distribution of the crustacean zooplankton population in Western Lake Superior (Larsmont and Stoney Point). A limited study of the copepod, Limnocalanus macrurus, was also conducted.

Cook, D.G. and M.G. Johnson. Benthic Macroinvertebrates of the St. Lawrence Great Lakes. J. Fish. Research Board Canada; 1974; 31: 763-782.

Cook, D.G. and H.K. Hiltunen. Phallodrilus Hallae: a New Tubificid Oligochaeta from the St. Lawrence Great Lakes. Canadian Journal of Zoology; 1975; 53: 934-941.

Cook, D.G. A Preliminary Report on the Benthic Macrophytes of Lake Superior. Burlington, Ontario: Canadian Centre for Inland Waters; 1975; Canada Fish. and Marine Service Tech. Rep. 572; 52 pp.
A study was conducted of the macrophytes in Lake Superior. Nine major regions were delineated, with zones drawn to minimize population size and comparison variation. Major trends were: benthic populations were greatest in the eastern lake waters, with Whitefish Bay having the highest density; benthic abundance generally correlated negatively with depth; faunal abundance was correlated negatively with sedimentary organic carbon content; and coarse-grained sediments had a greater abundance of fauna than fine-grained sediments.

Cook, Leonard T. and William C. Sonzogni. Great Lakes Environmental Planning Using Limnological Systems Analysis. Ann Arbor, MI: Great Lakes Basin Commission; 1979.
The report discusses use of mathematical models that can be used to evaluate the effect of different planning alternatives in the Great Lakes. The authors reviewed and evaluated present and future water resource problems, available data and mathematical models for large lakes.

Cook, P.M. Distribution of Taconite Tailings in Lake Superior Water and Public Water Supplies. National Water Quality Lab: US Environmental Protection Agency; 1973; Unpub.

Cook, P.M. Semi-Quantitative Determination of Asbestiform Amphibole Mineral Concentrations in Western Lake Superior Water Samples. Advances in X-Ray Analysis; 1975; 18: 557-567.

Cook, P.M. and I.V. Rubin. X-Ray Diffraction and Electron Beam Analysis of Asbestiform Minerals in Lake Superior Waters: Inst. of Electrical and Electronics Eng., Inc.; 1976. (Annals No. 75CH1004-I-34-I).

Cook, Philip M.; Ivan B. Rubin; Carl J. Maggiure and William J. Nicholson. X-Ray Diffraction and Electron Beam Analysis of Asbestiform Minerals in Lake Superior Waters.: Inst. of Elec. and Electronics Eng., Inc.; 1976; 11; pp.
Daily X-ray diffraction was used to determine estimates of the average and range of amphibole fibers per liter of water in western Lake Superior. Large fluctuations found in fiber concentrations were attributed to seasonal and meteorological changes which influence lake circulation.

Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data. Crustal Movement in the Great Lakes Area: Reports on Lake Superior, Lake Michigan-Huron, Lake Erie and Lake Ontario, May 1957 to April 1959; 1959.

Crawford, R.L.; L. Johnson and M. Martinson. Bacterial Enrichments in Surface Films of Freshwater Lakes. J. Great Lakes Research; 1982; 8(2): 323-325.
In midsummer, bacterial numbers in Lake Superior were 1.1 billion/ml in the surface film and 47 million/ml in the subsurface. Other oligotrophic and eutrophic lakes were looked at as well.

Croley, T.E. and H.C. Hartmann. Lake Superior Basin Runoff Modeling: National Oceanographic and Atmospheric Adm.; 1984; NOAA Tech. Memorandum ERL GLERL-50.

Croley, Thomas E. Lakes Ontario and Superior Basin Runoff Model Parameter Comparison. Proc. 26th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1983.

Czuczwa, J.M.; B.D. McVeety and R.A. Hites. Polychlorinated Dibenzodioxins and Dibenzofurans in Sediments from Siskiwit Lake, Isle Royale. Science; 1984; 226: 568-569.

D'Angelo, Donna J. and Stephen H. Bowen. Density Dependent Maturation Rates of Lake Herring (Coregonus Artedii LeSueur) in Lake Superior. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
To determine if the variation in age distributions and sex ratios of lake herring can be explained by density dependent rates of maturation, lake herring from three areas with different population densities were examined. Maturation schedules were obtained by analysis of scale spawning check patterns and by monitoring entry into the spawning population over a 4 year period (1981-1984). Results indicate that at high densities, male and female maturation rates are

approximately equal, resulting in a more stable population structure (50:50). Females matured at a relatively constant age, while males matured at an earlier age in low density populations.

Darbyshire, J. and A. Edwards. Seasonal Formation and Movement of the Thermocline in Lakes. Pure and Applied Geophysics; 1972; 93: 151-158.

Davis, C.C. Plankton Studies in the Great Lakes of the World, with Special Reference to the St. Lawrence Great Lakes of North America. Ann Arbor, MI: Univ. of Michigan, Great Lakes Research Div.; 1966; Pub. 14; pp. 1-36.

DeCooke, Benjamin G. Forecasting Great Lakes Levels. Proc. 4th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1961; 7: 79-84.
Paper is a discussion of the methods developed by the US Lake Survey for forecasting lake levels. Forecasts are based on stream discharge, precipitation, extreme and average lake levels.

Delfino, Joseph J. Toxic Substances in the Great Lakes. Env. Science and Tech.; 1979; 13(12): 1462-1468.
This paper is an overview of the origin, distribution, and fate of some heavy metals and organics in the lower great lakes. Primary focus is on Lakes Michigan, St. Clair and tributaries. A map of mercury concentrations in surface sediments of all the lakes, including Superior is included in the report.

Dell, C.I. An Occurrence of Greigite in Lake Superior Sediments. Amer. Minerology; 1972; 57: 1303-1304.

Dell, C.I. A Quantitative Mineralogical Examination of the Clay Size Fraction of Lake Superior Sediments. Proc. 16th Conf. Great Lakes Research. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1973: 413-420.
X-ray diffraction analysis were completed for the <2 micron fraction of late-glacial and post-glacial sediments of Lake Superior. The most abundant clay mineral in sediment was illite.

Dell, C.I. Sediment Distribution and Bottom Topography of Southeastern Lake Superior. J. Great Lakes Research; 1976; 2(1): 164-176.
Sediment distribution in southeastern Lake Superior was studied by using echosounding, coring, and surface sediment sampling. Dell recognized the factors governing sediment type as water depth, sediment source, water movement, trough morphology and lake history.

Dell, C.I. The Stratigraphy of Northern Lake Superior Late Glacial and Postglacial Sediments. Proc. 17th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1974; Part I: 179-192.
The paper describes the stratification of unconsolidated sediments in Lake Superior north of latitude 48. Stratification was investigated by echosounding and long cores at three major offshore topographic basins, several shallow water shoals and shelves.

Denison, P.J. and F.C. Elder. Thermal Inputs to the Great Lakes 1968-2000. Proc. 13th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1970; Part II: 811-828.
This paper is a survey of expected man-made thermal inputs to the Great Lakes system from electrical generating stations, steel mills, and municiple waste treatment plants for the period 1968-2000. A table of average annual inputs by lakeshore section for Lake Superior include L'Anse, Canadian Lakehead, and Chequamegon Bay.

Derecki, J.A. Preliminary Computations of Lake Superior Evaporation by Water Budget Method: US Lake Survey, Army Corp. of Eng.; 1965.

Dermott, R. Benthic Diversity and Substrate-Fauna Associations in Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 505-512.
Studies of the benthic community of Lake Superior indicate that both total abundance and low benthic diversity increased from west to east. Associations between the sediment variables and dominant species present indicated that the effects of depth, percent sand and mean particle size were prominent.

Dermott, R.M. Benthic Fauna Assemblages in Batchawana Bay, Lake Superior: Canadian Centre for Inland Waters; 1984; 17 pp.

DeVore, P.W. Fishery Resources of the Duluth-Superior Estuary. Superior, WI: Univ. of Wisconsin; 1978; Center for Lake Superior Environmental Studies Contract Report No. 54.

DeWitt, B.H.; D.F. Kahlbaum; D.G. Baker; J.H. Wartha; F.A. Keyes;D.E. Boayce; F.H. Quinn; R.A. Assel; A. Baker-Blocker and K.M. Kurdziel. Summary of Great Lakes Weather and Ice Conditions, Winter 1978-79; 1980; NOAA Tech. Memo ERL GLERL-31.

Dickas, A.B. and P.C. Tychsen. Sediments and Geology of Bois Brule River, Western Lake Superior. In: Proc. 12th Conf. Great Lakes Res.: Internat. Ass. Great Lakes Res.; 1969: pp. 161-169.

Dickas, Albert B. Depositional Environments of Lake Superior Sands Through Grain Size Analysis. Proc. 13th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1970; Part I: 227-232.
Sediment samples in fluvial, littoral, and inner neutic zones of western Lake Superior were analyzed by grain size. Study was conducted to increase ability to recognize and reconstruct paleo-environments in Lake Superior.

Diehl, S.; W. Maanum; T. Jordan and M. Sydor. Transports in Lake Superior. J. Geophys. Res.; 1977; 82(6): 977-978.
A depth integrated model was used to explain the movement of red clay plumes in extreme western Lake Superior. Results from the model also account for the migration of taconite tailings along the Minnesota shore from Silver Bay to the Duluth water intake.

Dobson, H. Nutrients in Lake Superior. Burlington, Ontario: Canada Centre for Inland Waters; 1972; Unpub. Report.

Dobson, H.F.; M. Gilberton and P.G. Sly. A Summary and Comparison of Nutrients and Related Water Quality in Lakes Erie, Ontario, Huron and Superior. J. Fish. Research Board Canada; 1974; 31: 731-738.

Downs, Warren. Fish of Lake Superior: Univ. of Wis. Sea Grant Program; 1984; WIS-SG-76-124; 32 pp.
Booklet provides a brief history of commercial fishing on Lake Superior, and the introduction of the sea lamprey. A description of commercially important fish species is also included.

Drown, D.B.; T. Olson and T. Odlaug. Pollution and Ecology of Nearshore Periphyton of Lake Superior: The Effects of Calefaction on Periphyton. Univ. of Minnesota: School of Public Health; 1972.

Drown, D.B.; T. Olson and T. Odlaug. The Response of Nearshore Periphyton in Western Lake Superior to Thermal Additions. Minneapolis, MN: Univ. of Minnesota; 1974; Bulletin No. 77; 159 pp. (PB-239-963). National Tech. Info. Services, Springfield, VA 22161.
The objectives of the study were to ascertain what effects a temperature increase of 10-12 C would have on the near-shore periphyton assemblage of western Lake Superior. Changes from diatoms to greens were noted to have serious repercussions on benthic grazers and the entire foodweb of the affected area. Holding tanks were used in the study and discharge from a

hypothetical thermal-electric generating station simulated to access changes.

Drummond, R.A.; G.F. Olson and A.R. Batterman. Cough Response and Uptake of Mercury by Brook Trout, Salvelinus Fontinalis, Exposed to Mercuric Compounds at Different Hydrogen-Ion Concentrations. Trans. Amer. Fish. Soc.; 1974; 103(2): 244-249.
Cough response of brook trout was used to predict the concentrations of mercuric chloride and cough frequency as a short term indicator of long term effects of methylmercuric chloride.

Dryer, W.R. Age and Growth of the Whitefish in Lake Superior: US Fish and Wildlife Service; 1963; Fish. Bull. 63; pp. 77-95.

Dryer, W.R. Bathymetric Distribution of Fish in the Apostle Island Region, Lake Superior. Trans. Amer. Fish. Soc.; 1966; 93: 248-259.

Dryer, W.R. and J. Beil. Growth Changes of the Bloater, Coregonus Hoyi, of the Apostle Islands Region of Lake Superior. Trans. Amer. Fish. Soc.; 1968; 97: 146-158.

Dryer, W.R. and J. Beil. Life History of the Lake Herring in Lake Superior: US Fish and Wildlife Service; 1964; Fish. Bull. 63; pp. 493-530.

Dryer, W.R. Movements, Growth, and Rate of Recapture of Whitefish Tagged in the Apostle Islands Area of Lake Superior: US Fish and Wildlife Service; 1964; Fish. Bull. 63; pp. 611-618.

Dryer, W.R. and G.R. King. Rehabilitation of Lake Trout in the Apostle Islands Region of Lake Superior. J. Fish. Research Board Canada; 1968; 25: 1377-1403.

Dryer, W.R.; L.F. Erkkila and C.L. Tetzloff. Food of Lake Trout in Lake Superior. Trans. Amer. Fish. Soc.; 1965; 94(2): 169-176.

Durham, R.W. and T. Pang. Asbestiform Fibre Levels in Lake Superior and Huron. Ottawa, Ontario: Inland Waters Directorate, Environment Canada; 1975; Scientific Series No. 67.
Asbestiform fiber concentrations were measured across western Lake Superior. Results indicate that the zone of influence of dumping of asbestiform fibers from Reserve Mining does not extend far out into the lake. Concentrations ranged from less than 0.1 million to 87.3 million per liter in 1973.

Eadie, B.J.; C.P. Rice and W.A. Frez. The Role of the Benthic Boundary in the Cycling of PCB's in the Great Lakes. IN: D. Mackay; S. Paterson; S.J. Eisenreich and M.S. Simmons, Editor. Physical Behavior of PCB's in the Great Lakes. Ann Arbor, MI: Ann Arbor Science; 1983; pp. 213-228.

Eddy, Samual. Limnological Notes on Lake Superior. Minn. Sci.; 1943; 11: 34-39.

Eddy, Samual. A Study of Fresh-Water Plankton Communities. Illinois Biol. Monographs; 1934; 12(4): 1-90. Random samples collected from Lake Superior at Duluth in July and August of 1928 were filtered and organisms counted using a Sedgewick-Rafter Cell.

Edsall, Thomas A. Age and Growth of the Whitefish Coregonus Clupeaformis of Munising Bay, Lake Superior. Trans. of the Amer. Fish. Soc.; 1960; 89(4).

Eisenreich, S.J. and B.B. Looney. Evidence for the Atmospheric Flux of Polychlorinated Biphenyls to Lake Superior. IN: D. Mackay; S. Paterson; S.J. Eisenreich and M.S. Simmons, Editors. Physical Behavior of PCB's in the Great Lakes. Ann Arbor, MI: Ann Arbor Science; 1983; pp. 141-156.

Eisenreich, S.J.; P.D. Capel and B.B. Looney. PCB Dynamics in Lake Superior Water. IN: D. Mackay; S. Paterson; S.J. Eisenreich and M.S. Simmons. Ann Arbor, MI: Ann Arbor Science; 1983; pp. 181-212.

Eisenreich, S.F.; B.B. Looney and J.D. Thornton. Assessment of Airborne Organic Contaminants in the Great Lakes Ecosystem. Windsor, Ontario: International Joint Commission; 1980; Report to the Science Adv. Board.

Eisenreich, S.J.; B.B. Looney and G.J. Hollod. PCB's in Lake Superior Atmosphere 1978-80. IN: D. Mackay; S.Paterson; S.J. Eisenreich and M.S. Simmons, Editors. Physical Behavior of PBC's in the Great Lakes. Ann Arbor, MI: Ann Arbor Science; 1983; pp. 115-126.

Eisenreich, S.J.; G.J. Hollod and T.C. Johnson. Accumulation of PCB's in Surficial Lake Superior Sediments: Atmospheric Deposition. Environ. Science and Tech.; 1979; 13: 569-573.

Eisenreich, S.J.; G.J. Hollod and T.C. Johnson. Atmospheric Concentrations and Deposition of Polychlorinated Biphenyls to Lake Superior. IN: Atmospheric Pollutants in Natural Waters. Steven J. Eisenreich, Editor. Ann Arbor, MI: Ann Arbor Science; 1981: 425-444; pp.
Air and water samples collected across the Lake Superior basin indicated that air concentrations of PCB's were highest in the western half of the lake. Results showed that concentration trends or values appear not to be related to wind direction or location. Total deposition of PBC from the atmosphere is estimated at 6600-8400 kg/yr, of which the majority is derived from dry deposition. An input-output model for Lake Superior was developed from which the authors concluded that atmospheric deposition is the major source of PCB to the lake, and loss to sediments and the water column the major sinks.

Eisenreich, S.J.; G.J. Hollod; T.C. Johnson and J. Evans. Polychlorinated Biphenyl and Other Microcontaminant-Sediment Interactions in Lake Superior Sediments. IN: Sediment-Contaminant Interactions. R. Baker, Editor. Ann Arbor, MI: Ann Arbor Science; 1980: pp. 67-94.

Eisenreich, S.J.; P.D. Capel; B.B. Looney and J.A. Robbins. Chlorinated Hydrocarbons (CH) in Pore Water an Sediments of the Great Lakes. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
Profiles of PCB's and some other chlorinated hydrocarbons were examined by determining their concentrations in porewaters and solids of surface sediments and core profiles from several Great Lakes, including Superior. All CH's analyzed were enriched in porewater compared to overlying water by 10 to 1000, even in uncontaminated sediments. A depth profile from western Lake Superior core implies a diffusive efflux of approximately 4 ng/m2/day.

El-Shaarawi, A. and M. Munawar. Statistical Evaluation of the Relationships Between Phytoplankton Biomass, Chlorophyll a and Primary Production in Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 443-455.
Phytoplankton biomass, chlorophyll a and primary productivity data collected in 1973 from Lake Superior were statistically analyzed using different regression techniques. The relationship between the biomass and chlorophyll a was highly significant but the degree of significance varied by season. The variability in the chlorophyll a concentration was closely related to changes in relative abundance of various taxonomic groups of phytoplankton.

Elder, F.C. International Joint Commission Program for Atmospheric Deposition Loading to the Upper Great Lakes. Proc. 2nd Federal Conf. on the Great Lakes; Mar. 25-27; 1975.

Elly, Charles T. Atmospheric Loadings to Waters of the Four Upper Great Lakes. Chicago, IL: Environmental Protection Agency, Region 5; 1980.
The report contains a summary of loadings to the four upper great lakes for 33 parameters including pH, conductance, solids, nutrients and metals during the period from August 1978 to July 1979. It also contains recommendations on how to eliminate problems in sampling and how to obtain data in usable form.

Environmental Protection Agency. Pollution of Lake Superior and Its Tributary Drainage Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf, Third meeting of session; April 22-23, 1971; Duluth, MN; 1971; 528 pp.
Discussion and recommendations on taconite tailing disposal, opinions of attorney general and water quality report.

Environmental Protection Agency. Pollution of Lake Superior and Its Tributary Drainage Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf, Second Meeting of Session; January 14-15, 1971; Duluth, MN; 1971; Vol. I and II; 268 and 168 pp. respec.
Discussion and recommendations on water pollution control, environmental ecology, sewage inspection surveys for homes, communications on pollution, taconite and Silver Bay mining operations.

Erbisch, Frederic H; Susan T. Bagley; Stephen H. Bowen and Robert E. Keen. An Ecological Assessment of the Impact of Lake Dumping of Iron Ore Wastes on the Michigan Waters of Lake Superior. Houghton, MI: Michigan Tech. Univ.; 1981; Report for the State of Michigan; 76 pp.
A survey of the Michigan waters of Lake Superior was initiated to determine if asbestiform fibers similar to those introduced into the lake by Reserve Mining Company in Minnesota were present in Michigan waters. Objectives were to determine the fiber concentrations in water, sediment, potable water supplies, amount ingested by fish and to determine the effects of asbestiform fibers on important aquatic invertebrates and microbial activities. Results indicate that there are no harmful quantities of asbestiform fibers in Michigan waters of Lake Superior, drinking water, sediments or fish.

Eschmeyer, P.H. The Early Life History of the Lake Trout in Lake Superior. Lansing, MI: Michigan Dept. of Conservation; 1956; Institute of Fish. Res. Misc. Pub. 10.

Evans, J.E. Pb-210 Geochronology in Lake Superior Sediments: Sedimentation Rates, Organic Carbon Deposition, Sedimentary Environment and Post-Depositional Processes. Minneapolis, MN: Univ. of Minnesota; 1980.

Evans, J.E.; T.C. Johnson; E.C. Alexander Jr.; R.S. Lively and S.J. Eisenreich. Sedimentation Rates and Depositional Processes in Lake Superior from Pb-210 Geochronology. J. Great Lakes Research; 1981; 7: 299-310.
Sedimentation rates from 17 box cores in Lake Superior were determined by Pb210 geochronology. Data indicate that sedimentation rates, and processes vary significantly in different regions of Lake Superior.

Fahnenstiel, Gary L. The Seasonal and Vertical Distribution of Phytoplankton Biomass, Chlorophyll a, and Primary Production at a Station in Central Lake Superior. Houghton, MI: Michigan Tech. Univ.; 1980; Masters Thesis.
Study was conducted at a deep water station in central Lake Superior. Seasonal and vertical distribution of primary production, chlorophyll a, and phytoplankton biomass were determined along with the importance of various algal size fractions. Fahnenstiel also looked at the deep chlorophyll layer and mechanisms responsible for its existence.

Fairless, Billy. Asbestos Fiber Concentrations in the Drinking Water of Communities Using the Western Arm of Lake Superior as a Potable Water Source: Environmental Protection Agency; 1977; Region 5, Central Regional Lab Report; 23 pp.
Concentrations of asbestos fibers were determined by X-Ray diffraction and by transmission electron microscopy. Data show decreasing concentrations of fibers as one proceeds from Silver Bay, Minnesota counterclockwise around the western arm of Lake Superior.

Farrand, William R. Former Shorelines in Western and Northern Lake Superior Basin. Ann Arbor, MI: Univ. of Michigan; 1960 Unpub. PhD Dissertation.

Farrand, William R. Late-Glacial and Post-Glacial Sedimentation in the Deep Basins of Lake Superior. Mitt. Internat. Verein. Limnol.; 1969; 17: 34-42.

Farrand, William R. The Quaternary History of Lake Superior. Proc. 12th Conf. Great Lakes Research. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1969: 181-197.
A discussion of the quaternary history of the Lake Superior basin is accompanied by data collected on sediment thickness and sediment rates across the glacial sediment sequence.

Federal Water Pollution Control Administration. An Appraisal of Water Pollution in the Lake Superior Basin. Great Lakes-Illinois River Basins Project (Revision of 1969 report); 1970; 60 pp.
Actions needed to preserve the high quality of waters in the Lake Superior basin and to improve degraded waters are discussed. The report is based on studies by the Federal Water Pollution Control Administration for US waters of Lake Superior.

Federal Water Pollution Control Administration. Pollution of Lake Superior and Its Tributary Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf., Second Session; April 29-30, 1970; Duluth, MN; 1970; Vol. I and II; 460 and 441 pp. respec.
Conference proceedings include a discussion and recommendations on waste disposal, radioactivity, water quality monitoring stations, phytoplankton analysis, and related information on Lake Superior and its tributaries.

Federal Water Pollution Control Administration. Pollution of Lake Superior and Its Tributary Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf., Second Session (reconvened); August 12-13, 1970; Duluth, MN; 1970; Vol. I and II; 468 and 312 pp. respec.
Included in the conference proceedings are discussions and recommendations on taconite tailings, analytical data on Lake Superior, status of compliance and related information on Lake Superior and its tributaries.

Federal Water Pollution Control Administration. Pollution of Lake Superior and Its Tributary Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf.; May 13-15, 1969; Duluth, MN; 1969; Vol. I-IV; 348, 507, 370 and 493 pp. respec.
Discussion and recommendations on enforcement of water quality laws, pesticides, major interstate waters, waste discharge, taconite industry and wastes, green water, Lake Superior drainage basin 28, surface water chemistry, erosion and sediment control, bacteriologic data, tributary and Lake Superior monitoring programs and water quality standards.

Federal Water Pollution Control Administration. Pollution of Lake Superior and Its Tributary Basin - the States of Minnesota, Wisconsin, and Michigan. Proc. of Conf., Session reconvened; Sept. 30 - Oct. 1, 1969; Duluth, MN; 1969; 267 pp.
Report includes discussion and recommendations on dissolved oxygen, water analysis, Lake Superior bottom sediments and industrial waste discharges in Lake Superior.

Federal Water Pollution Control Administration. Water Pollution Problems of the Great Lakes Area - Revised from 1966 Report. Great Lakes-Illinois River Basins Project. Chicago, IL; 1967; 31 pp.
This report identifies physical problems in the Great Lakes and management implications. Federal, state, regional, local and international agency activities for pollution control are reviewed and recommendations made for specific pollution control measures.

Federal Water Quality Administration. Report on the Water Movements and Temperature Structure in Lake Superior Based on 1966-1967 Field Study. Chicago, IL: US Dept. of the Interior, FWQA Great Lakes Region; 1968; 66 pp.

Feldt, E.F.; E.F. Stoermer and C.E. Schelske. Occurrence of Morphologically Abnormal Synedra Populations in Lake Superior Phytoplankton. Proc. 16th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1973: pp. 34-39.
Samples taken from 1968-1971 have shown examples of variant populations of Synedra. The morphological changes first appeared and remains most abundant in western Lake Superior, but is increasingly becoming more widespread. The abnormalities were not found in 1966 samples. Samples off the east end of Isle Royale taken in 1968 show no variant populations while one station outside of Washington Harbor contained a significant population of variant Synedra.

Fischer, J.; C. Thomas; M.A. Levin and V.J. Cabelli. Heterotrophic Bacterial Densities in Western Lake Superior and Their Relationships to Taconite Tailings Discharged Therein: Examination of Net, Sediment Trap, Bottom Core, Launder Effluent and Ore Samples: Environmental Protection Agency; 1973; National Environmental Research Center Report. (Unpub.).

Fischer, J.; C. Thomas; M.A. Levin and V.J. Cabelli. Multiplication of Bacteria in Lake Superior Water Containing Taconite Tailings: Lab Studies: Environmental Protection Agency; 1973; Northeast Water Supply Research Lab Report. (Unpub.).

Flood, R.D. and T.C. Johnson. Side-Scan Targets in Lake Superior - Evidence for Bedforms and Sediment Transport. Sedimentology; 1984; 31(3): 311-333.
A high resolution side scan sonar survey of the lake bed off the Keweenaw Peninsula demonstrates that bottom currents are affecting lake bed morphology at depths up to 240mm. It was also shown that there can be significant lateral variability in bottom character and structure over a short distance, even in the center of the lake.

Forbes, S.A. On Some Lake Superior Entomostraca; US Comm. Fish and Fisheries Report 1887; pp. 701-718.

Fox, J.L.; T.O. Odlaug and T.A. Olson. The Ecology of Periphyton in Western Lake Superior. Part I - Taxonomy and Distribution: Univ. of Minnesota, Water Resources Research Center; 1969; Bulletin 14; 127 pp.

Fox, Jackson L.; Theodore A. Olson and Theron O. Odlaug. The Collection, Identification and Quantification of Epilithic Periphyton in Lake Superior. Proc. 10th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1967: pp. 12-19.
Periphyton in a small bay (Stoney Point Bay) on the north shore of the western arm of Lake Superior were collected, identified, and quantified. Rocks from depths to 35 feet were recovered using SCUBA diving techniques. Rock surface area, average number of organisms at each depth, and tons of periphyton per unit area were determined. A checklist of predominant genera found is included in the report.

Fox, M.E. Fate of Selected Organic Compounds in the Discharge of Kraft Paper Mills into Lake Superior [Canadian Centre for Inland Waters]. IN:: L.H. Keith, Editor. Identification and Analysis of Organic Pollutants in Water. Ann Arbor, MI: Ann Arbor Science; 1976: pp. 641-659.
The study identified 35 organic compounds which are discharged from the Kraft Paper Mill in Nipigon Bay. Of these, only dehydroabietic acid persisted in the water column. The effects of this compound on fish is unknown. Surface sediments also contained elevated levels of the acid.

Fox, M.E. Persistence of Dissolved Organic Compounds in Kraft Pulp and Paper Mill Effluent Plumes. J. of Fish. Research Board Canada; 1977; 34(6): 798-804.
The persistence of dissolved organic compounds in the effluent plumes of a pulp and paper mill on the north shore of Lake Superior were studied in 1974. Ninety organic compounds were observed of which 36 of the major ones were identified. Dehydroabietic acid was the only major organic compound of the 5 observed to

exhibit measureable persistence 2000 meters from the effluent discharge point.

Francis, G.R.; J.J. Magnuson; H.A. Regier and D.R. Talhelm. Rehabilitating Great Lakes Ecosystems. Ann Arbor, MI; 1979; Report to Great Lakes Fishery Commission; 140 pp.

Frank R.; R.L. Thomas; H.E. Braun; J. Rasper and R. Dawson. Organochlorine Insecticides and PCB in the Surficial Sediments of Lake Superior. J. Great Lakes Research; 1980; 6: 113-120.
Analysis of Lake Superior sediments (0-3cm) collected in 1973 were found to contain low levels of DDE and PCB. DDE was more concentrated in depositional basins than non-depositional basins, while PCB levels were similar in both.

Frank, R.; M. Holdrinet; H.E. Braun; D.P. Dodge and G.E. Sprangler. Residues of Organochlorine Insecticides and Polychlorinated Biphenyls in Fish from Lakes Huron and Superior, Canada, 1968-1976. Pesticides Monitoring Journal; 1978; 12(2): 69-80.
Five species of fish from Lake Superior and 12 from Huron were analyzed for organochlorine pesticides and polychlorinated biphenyls between 1968 and 1975. Results indicate that in Lake Superior the mean level of DDT had decreased in lake trout by 1975, and was highest in bloaters. Dieldrin levels changed little in Superior over that time period.

Freitag, R.; P. Fung; J.S. Mothersill and G.K. Prouty. Distribution of Benthic Macroinvertebrates in Canadian Waters of Northern Lake Superior. J. Great Lakes Research; 1976; 2: 177-192.

Gannon, J.E. Great Lakes Plankton Investigations: A Bibliography. Milwaukee, Wisconsin; 1969; Center for Great Lakes Studies, Special Report 7; 65 pp.

Gburek, William J. and George T. Berry. Prediction of Lake Superior Monthly Inflows Using Precipitation, Temperature, and Inflow Records. Proc. 10th Conf. Great Lakes Res. Ann Arbor, MI: Intern. Ass. Great Lakes Res.; 1967: pp. 197-207.
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Korda, Randolf J.; Thomas E. Henzler; Philip A. Helmke; Marta M. Jimenez; Larry A. Hasken and Edwin M. Larsen. Trace Elements in Samples of Fish, Sediments and Taconite From Lake Superior. J. Great Lakes Research; 1977; 3(1-2): 148-154.
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Peck, J. Species Composition of Deep Water Ciscoes (Chubs) in Commercial Catch from Michigan Waters of Lake Superior. Lansing, MI: Michigan Dept. of Natural Resources; 1978; Report 1849; 10 pp.

Peck, J.W. Straying and Reproduction of Coho Salmon, Ocorynchus Kisutch, Planted in Lake Superior Tributary. Trans. Amer. Fish. Soc.; 1970; 99: 591-595.

Pentland, R.L. Runoff Characteristics in the Great Lakes Basin. Proc. 11th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1968: pp. 326-359. A general discussion of the effects of climatological and physical features in relation to runoff characteristics is accompanied by maps showing distribution of runoff for the entire Great Lakes basin on a monthly and annual basis. Graphical representations of the area-runoff distribution for sub-basins is presented as well. Lake Superior basin characteristics: mean runoff, precipitation, temperature, snow as a percent of total precipitation, channel and land slopes, and drainage density are given for 10 tributaries.

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Phillips, David W. and J.A.W. McCulloch. The Climate of the Great Lakes Basin. Climatological Studies No. 20, Atmospheric Environment. Toronto, Ontario: Environment Canada; 1972.

Phillips, David W. Environmental Climatology of Lake Superior. J. Great Lakes Res.; 1978; 4(3-4): 288-309. Data files from commercial and research vessels have been used to describe the regional climate of Lake Superior. The effects of the climate on potential quality of the air-water environment is also discussed.

Phycha, R.L. and G.R. King. Changes in Lake Trout Populations of Southern Lake Superior in Relation to the Fishery, the Sea Lamprey and Stocking, 1950-70. Ann Arbor, MI; 1975; Great Lakes Fish. Comm. Tech. Report 28.

Ploey, J. Wave Climate Study - Lake Superior. Proc. 9th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1966; 15: 345-351.
Four wave recording stations were operated from July to December 1965 in Lake Superior. Computation of the distribution of wave heights showed some agreement with the distribution of wave heights in ocean-wave records.

Plumb, R.H. and G.F. Lee. Phosphate, Algae, and Taconite Tailings in the Western Arm of Lake Superior. Proc. 17th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1974: pp. 823-836.
The purpose of the investigation was to evaluate the significance and availability of phosphate associated with taconite tailings that are discharged into the Minnesota waters of Lake Superior. Leaching studies showed that phosphate from Reserve Mining Company would not be leached from the tailings in significant quantities. The study also showed that tailings did not stimulate algal growth and were non-toxic. Based on primary productivity observations it was concluded that discharge of tailings would not contribute to eutrophication of Lake Superior.

Plumb, R.H. and G.F. Lee. The Phosphate Flux to the Western Arm of Lake Superior and Its Relation to the Algae Distribution in This Part of the Lake. Madison, WI: Univ. of Wisconsin; 1973; Report prepared for Reserve Mining Co., Silver Bay, MN; 28 pp.

Plumb, R.H. Jr. and G.F. Lee. Response of Lake Superior Algae to Nutrients and Taconite Tailings. J. Water Pollution Control Federation; 1975; 47(3): 619-625.
From 1971 to 1973, a nutrient spiking study was conducted primarily in the western portion of Lake Superior. Algal limiting nutrients, changes in limiting nutrients with time, and algal response to taconite tailings were investigated. It was concluded that algae respond to phosphate, but not taconite tailings alone. Also, taconite tailings were not toxic to algae.

Plumb, R.H. Jr. A Study of the Potential Effects of the Discharge of Taconite Tailings on Water Quality in Lake Superior. Madison, WI: Univ. of Wisconsin; 1973; 550 pp. PhD Dissertation.

Polak, J. and M.D. Palmer. Concentration Pattern of Chemical Constituents in a Paper Mill's Effluent Plume: Dynamics and Model. J. Fish. Research Board Canada; 1977; 34: 805-816.
The variation of the conductivity in the effluent plume for a paper mill discharge in Nipigon Bay was studied to provide data for predictive models. Local winds and currents were measured, analyzed and related to the plumes location. The models are capable of predicting the extent of the plume in the lake for a given wind condition.

Poldoski, John E. Cadmium Bioaccumulation Assays: Their Relationship to Various Ionic Equilibrium in Lake Superior Water. Env. Science and Tech.; 1979; 13: 701-706.
Describes potential use of Daphnia magna as a tool in studying properties of various forms of Cadmium. Relationships between total aqueous cadmium concentrations and bioaccumulations of cadmium were observed. It was found that certain acids reduced cadmium uptake.

Poldoski, John E. and G.E. Glass. Methodological Considerations in Western Lake Superior Water Sediment Exchange Studies of Some Trace Elements. IN: US National Bureau of Standards. Proc. 7th IMR Symp., Accuracy in Trace Analysis: Sampling, Sample Handling, and Analysis; 1976; Vol. II(Special Publication 422): pp. 1073-1088.
Trace element measurements on western Lake Superior were taken as a function of geographical area and distance above and below the water-sediment interface. Different methods were used and experiments done to determine the influence of sample handling, collection and analysis steps.

Poldoski, John E.; E.N. Leonard; J.T. Fiandt; L.E. Anderson; G.F. Olson and G.E. Glass. Factors in the Determination of Selected Trace Elements in Near Shore United States Waters of Lake Superior and Lake Huron. J. Great Lakes Research; 1978; 4(2): 206-215.
Determinations of total heavy metal concentrations in waters from 48 stations in Lake Superior and Huron were made using flameless atomic absorbtion analytical methods in 1977. River waters were found to be slightly higher in total element concentrations than lake waters, except for iron and manganese. Nearshore waters of both lakes were very similar.

Pollution From Land Use Activities Reference Group (PLUARG). Environmental Management Strategy for the Great Lakes. Windsor, Ontario: International Joint Commission; 1978.

Pringle, C.M.; D.S. White; C.P. Rice and M.L. Tuchman. The Biological Effects of Chloride and Sulfate With Specific Emphasis on the Laurentian Great Lakes. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1981; Pub. 20.

Public Health Service. A Comprehensive Water Pollution Control Program for the Lake Superior Drainage Basin. Prepared in cooperation with the States Water Pollution Control agencies of Michigan, Wisconsin and Minnesota; 1954; Water Pollution Series; 53 pp.
The report describes a water pollution control program for the Lake Superior drainage basin. The program was based on data available as of January 1954.

Putnam, H.D. and T.A. Olson. An Investigation of Nutrients in Western Lake Superior. Minneapolis, MN: Univ. of Minnesota, School of Public Health; 1960; 24 pp.
The study focused on nutrient inputs into the extreme western portion of Lake Superior from tributary streams and rainfall. Water samples were analyzed in an attempt to evaluate the extent to which each source influenced the chemical composition of the lake. Major chemical constituents, temperature, and transparency were observed from the surface to a maximum depth of 200 feet.

Putnam, H.D. and T.A. Olso. A Preliminary Investigation of Nutrients in Western Lake Superior. Minneapolis, MN: Univ. of Minnesota, School of Public Health; 1959; 32 pp.

Putnam, H.D. and T.A. Olson. Primary Productivity at a Fixed Station in Western Lake Superior. Proc. 9th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1966: pp. 119-128.

Putnam, H.D. and T.A. Olson. Studies on the Productivity and Plankton of Lake Superior. Minneapolis, MN: Univ. of Minnesota, School of Public Health; 1961; 24 pp. + appendices.
Study was concerned with enumeration and identification of plankton and periphyton in western Lake Superior. Seasonal distributions of plankton, primary productivity and light intensity were also measured. Aerial surveys of "green" water areas of Lake Superior were investigated as well.

Results indicate that phytoplankton populations are composed primarily of chrysophyta with diatoms being most abundant. The greatest number of organisms was observed in July. No fall upsurge of diatoms reported in other freshwater lakes was observed. Phytoplankters were concentrated just below the surface and just above

the thermocline at 40 meters. "Green water" was largely limited to the area between Encampment Island and Silver Bay, MN.

Putnam, Hugh Dyer. A Study of the Nutrients, Productivity and Plankton in Western Lake Superior. Minneapolis, MN: Univ. of Minnesota; 1963; 287 pp.
Investigation of primary productivity, phytoplankton species composition and biomass, and water chemistry of western Lake Superior was the objective of this study.

Pycha, R.L. and G.R. King. Changes in the Lake Trout Population of Southern Lake Superior in Relation to the Fishery, the Sea Lamprey, and Stocking, 1950 to 1970; 1975; Great Lakes Fishery Comm. Tech. Report 28.

Pycha, R.L. Changes in Lake Trout Stocks in Lake Superior, 1976. Minutes from Lake Superior Comm.: Great Lakes Fishery Comm.; 1977.

Pycha, R.L. Status of Lean Lake Trout in Michigan Waters of Lake Superior, 1975. Minutes from Lake Superior Comm. meeting: Great Lakes Fishery Comm.; 1976; Report from the US Fish and Wildlife Service.

Pycha, Richard L. The Relative Efficiency of Nylon and Cotton Gill Nets for Taking Lake Trout in Lake Superior. J. Fish. Research Board Canada; 1962; 19(6): 1085-1094.

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Quinn, F.H. and M.J. Todd. Lake Superior Beginning of Monthly Water Levels and Monthly Rates of Storage Changes. Detroit, MI: National Ocean Survey, Lake Survey Center; 1974; NOAA Tech. Memo NOS LSC-R4; 41 pp.
Results of a study of Lake Superior beginning of month levels and rates of storage changes is described in the report for the period of 1900-1972.

Ragotzkie, R.A. The Great Lakes Rediscovered. American Scientist; 1974; 62(4): 454-464.

Ragotzkie, R.A. Infrared Temperature Patterns and Infrared Vertical Motions in Lake Superior. Proc. 8th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1965: pp. 349-357.

Ragotzkie, R.A. The Keweenaw Current, a Regular Feature of Summer Circulation of Lake Superior. Madison, WI: Univ. of Wisconsin, Dept. of Meteorology; 1966; Tech. Report 29.

Ragotzkie, R.A. Summer Thermal Structure and Circulation of Chequamegon Bay, Lake Superior-A Fluctuating System. In: Proc. 13th Conf. Great Lakes Res.: Internat. Ass. Great Lakes Res.; 1969: pp. 686-704.

Ragotzkie, R.A. and H.J. Niebauer. Temperature Regime in Lake Superior at Silver Bay, Minnesota. Verh. Intern. Vere. Limnol.; 1975; 19(1): 144-418.
On the western shore of Lake Superior, near Silver Bay, Minnesota, a series of thermistors were installed where the lake depth exceeds 275 meters. Thermisters were placed at 9 depths from 4 meters to 152 meters. Analsyis of the data show that Lake Superior undergoes both summer and winter thermal stratification and mixes vertically twice each year. Sieche periods and upwellings were evident from the thermal records.

Ragotzkie, R.A. Vertical Motions Along the North Shore of Lake Superior. Proc. 17th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1976; Part I: pp. 456-461.
A 10 day upwelling episode in deep water along the north shore of Lake Superior (Silver Bay), was documented with continuous temperature records at 9 levels and horizontal currents at 3. Upwelling is thought to occur once or twice per month during the thermal stratification of the region.

Rainey, R.H. Natural Displacement of Pollution From the Great Lakes. Science; 1967; 155: 1242.

Rao, D.B. and D.J. Schwab. Two Dimensional Normal Modes in Arbitrary Enclosed Basins on a Rotating Earth: Application to Lakes Ontario and Superior. Phil. Trans. Royal Soc. London (A); 1976; 281: 63-96.

Rao, S.S. Observations on Bacteriological Conditions in the Upper Great Lakes 1968-1974. Burlington, Ontario: Canada Centre for Inland Waters; 1976; Scientific Series No 64; 31 pp.
The report describes nearshore lake-wide bacterial levels showing their temporal and spatial variations in both Lake Superior and Huron. The existing baseline levels for the main body of Lake Superior are also included.

Rao, S.S. and J. Henderson. Summary Report of Microbiological Baseline Data on Lake Superior. Burlington, Ontario: Canadian Centre for Inland Waters, Inland Waters Directorate; 1974; Scientific Series 45; 8 pp.
In 1973, six lake-wide cruises were made to collect bacteriological data to establish baseline levels and develop criteria for non-degradative water quality standards. Samples were collected from 117 stations

from 1 to 50 meters and the bottom. In 85% of the samples, fecal coliform and strep levels were less than 1 per 100 mL.

Rao, S.S. Surface Distribution of Aerobic Heterotrophs and Their Relationships to Temperature and Nutrients in Lake Superior During 1973. J. Great Lakes Res.; 1978; 4(3-4): 408-414.
The distribution and densities of aerobic heterotrophic bacteria were measured in the surface waters of Lake Superior from May to November, 1973, and correlated with temperature and certain nutrients. On a lake-wide basis, bacterial densities were closely related to temperature. The importance of psychrophilic bacterial species in the nearshore areas of the lake and the relationships between heterotrophs and nutrients in the lake are discussed.

Rao, S.S.; A. Jurkovic; A. El-Shaarawi and B.J. Dutka. Microbiological Study of Point Source Discharge into Lake Superior; 1975; Unpub. Canadian Centre for Inland Waters Manuscript.

Rao, S.S.; D.A. Rokosh and A.A. Jurkovic. Influence of a Point Source Pulp Mill Effluent Discharge on the Near Shore Bacterial Communities in Lake Superior. Proc. 2nd Conf. on the Great Lakes: Interagency Committee on Marine Science and Eng.; 1975: pp. 397-408.
Study was conducted in Nipigon Bay to compare and evaluate the use of chemical or bacteriological parameters to delineate the zone of impact and the influence of pulp mill effluent on receiving waters. Chemical measurements could detect the zone of influence up to 3000 meters, bacteria up to 10,000 meters.

Rast, Walter and Dennis J. Gregor. Report on Differences in Great Lakes Phosphorus Load Estimates; 1979; Report submitted to PLUARG Task Group D; 179 pp.

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Reid, John R. Investigation of Bottom Cores from North and South-Central Lake Superior. Proc. 4th Conf. Great Lakes Research. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1961; 7: 126-144.
Ten bottom cores taken in north and south central Lake Superior in 1953 were physically and chemically analyzed. Results indicate a gradual change in the sedimentation rate over time. The author looked at grain size, inorganic and organic composition of the cores.

Reinert, R.E. Pesticide Concentrations in Great Lakes Fish. Pesticides Monitoring Journal; 1970; 3(4): 233-240.

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This issue of Resources discusses the water pollution problems in Lake Superior caused by Reserve Mining Company in Minnesota.

Reynolds, C.S. The Ecology of Freshwater Phytoplankton. Cambridge, Massachusettes: Cambridge University Press; 1984; 384 pp.

Rice, C.P. and M.S. Evans. Toxaphene in the Great Lakes. IN: J.O. Nriagu and M.S. Simmons, Editors. Toxic Contaminants in the Great Lakes. New York, NY: John Wiley and Sons; 1984 pp. 163-194.

Richards, T.L. and J.G. Irbe. Estimates of Monthly Evaporation Losses From the Great Lakes 1950 to 1968 Based on Mass Transfer Technique. Proc. 12th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1969: pp. 469-487.

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Robertson, A. and C.F. Powers. Comparison of the Distribution of Organic Matter in the Five Great Lakes. In: J.C. Ayers and D.C. Chandler, Editors. Studies on the Env. and Eutrophication of Lake Michigan. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1967; Spec. Report 30; pp. 1-18.

Robertson, A. and D. Scavia. North American Great Lakes. IN: F.B. Taub, Editor. Lakes and Reservoirs. Amsterdam, The Netherlands: Elsevier Science Publishers; 1984: pp. 135-176.

Robertson, Andrew and John S. Gannon. Annotated Checklist of the Free-Living Copepods of the Great Lakes. J. Great Lakes Research; 1981; 7(4): 382-393.
An annotated list of free living copepods of the Great Lakes was developed using published literature.

Rodgers, G.K. Temperature and Currents in the Great Lakes. In: The Great Lakes as an Environment: Univ. of Toronto, Great Lakes Inst.; 1969; PR-39; pp. 36-50.

Rodgers, G.K. The Thermal Bar in the Laurentian Great Lakes. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1965; Pub. 13; pp. 358-363.

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Rokosh, D.A.; S.S. Rao and A.A. Jurkovic. Extent of Effluent Influence on Lake Water Determined By Bacterial Population Distributions. J. Fish. Research Board Canada; 1977; 34: 844-849.
Populations of heterotrophic bacteria, total and fecal coliform, and sulfur cycle bacteria were measured in a large body of water receiving the effluent of a pulp and paper industry. Elevated bacterial populations were detected near the effluent outfall, and extended as far as 19 km from the effluent outfall.

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Ruschmeyer, O.R. and T.A. Olson. Water Movements and Temperatures of Western Lake Superior. Minneapolis, MN: Univ. of Minnesota, School of Public Health; 1958; 65 pp.

Ruschmeyer, Orlando R.; Theodore A. Olson and Herbert M. Bosch. Lake Superior Study. Minneapolis, MN: Univ. of Minnesota, School of Public Health; 1957; 79 pp.

Russel, T. Effect of Rainfall on the Level of the Great Lakes: US Lake Survey, Army Corp. of Eng.; 1906; File No. 3-1852.

Ryan, D.J. Local Effects of Wisconsin Tributaries to Lake Superior Water Quality: Wisconsin Dept. of Natural Resources; 1975; Report to Water Quality Board D-14.

Ryan, D. and M. Stokstad. Wisconsin Tributary Loadings to the Upper Great Lakes. Madison, Wisconsin: Wisconsin Dept. of Natural Resources; 1975; 64 pp.
Land source inputs to Lake Superior from four major Wisconsin tributaries were evaluated. Results indicate that Lake Superior water off the Wisconsin tributaries is of excellent quality and supports diverse and abundant populations of aquatic organisms.

Ryder, R.A. Dynamics Exploitation of Mature Walleyes Stizostedion Vitreum Vitreum, in the Nipigon Bay Region of Lake Superior. J. Fish. Research Board Canada; 1968; 25: 1347-1376.

Rygweski, K.R. Partitioning of Toxic Metals Between Solid and Liquid Phases in the Great Lakes. Bloomfield Hills, MI: Cranbrook Institute of Science; 1984.
Enrichment of cadmium, lead, zinc, and copper were found in surface sediments of Lake Superior and Huron. The author discusses how dredging operations and other water turbulence resuspends these particulates and metals may be released again to the water column.

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Saanristo, M. Stratigraphical Studies on the Shoreline Displacement of Lake Superior. Canadian J. of Earth Science; 1975; 12: 300-319.

Saarnisto, M. The Deglaciation History of the Lake Superior Region and Its Climatic Implications. Quat. Res.; 1974; 4: 316-339.

Sandilands, R.G. Effect of Pulp Mill Effluent on the Surficial Sediments of Western Nipigon Bay, Lake Superior. J. Fish. Research Board Canada; 1977; 34(6): 817-823.
Bottom sediment samples were taken from the zone of influence of a point source discharge from the kraft paper mill at Red Rock, Ontario. The results showed that the mill discharge decreased pH and increased organic matter in the sediment. Above average concentrations of total sulfur and mercury appeared to be associated with this organic matter. Effects were localized and were detectable to 5 km downstream from the mill outfall.

Saulesleja, Andrej. Impacts of Carbon Dioxide Warming on the Great Lakes. Proc. 26th Conf. Great Lake Research. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1983.
Energy balance calculations of increases in lake surface temperature and evaporation are performed using results from climate models. Water temperature calculations show increases of one degree greater than air temperature in the summer and one degree less in winter for Lake Superior. Also, annual evaporation increased by 99 mm or 20%.

Saunders, George W. Studies of Primary Productivity in the Great Lakes. Proc. 7th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1964; 11.
Report reviews past and present research on the lakes and presents chloride concentrations, photosynthethetic rates and other data from studies.

Saylor, J.H. and S.B. Upchurch. Bottom Stability and Sedimentary Processes at Little Lake Harbor, Lake Superior. Detroit, MI: US Lake Survey; 1970; Research Report No. 2-1; 18 pp.

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Schaefer, W.F.; W.A. Swenson and R.A. Heckmann. Age, Growth and Total Mortality of Rainbow Smelt in Western Lake Superior. Trans. Wisc. Acad. Sci. Arts and Letters; 1981; 69: 15-20.

Schaefer, Wayne F.; Richard A. Heckman and Wm. A. Swenson. Post-Spawning Mortality of Rainbow Smelt in Western Lake Superior. J. Great Lakes Research; 1981; 7(1): 37-41.
Extensive die offs of rainbow smelt in and near the Duluth-Superior Harbor were investigated. Die off is attributed to temperature stress on spawning smelt which increases the susceptibility of smelt to fungus Saprolegnia and may have prompted osmoregulatory imbalance.

Schelske, C.L. Biogeochemical Silica Mass Balances in Lake Michigan and Lake Superior. Biogeochemistry; 1985; 1: 197-218.
Mass balance calculations for both lakes agree with previous studies in that permanent burial of biogenic silica in sediments may be only about 5% of the biogenic silica produced by diatoms. The annual net production of biogenic silica in Lake Superior is only 8.3% as compared to 71% in Lake Michigan. The difference is attributed to phosphorus enrichment in Lake Michigan.

Schelske, C.L. and J.C. Roth. Limnological Survey of Lakes Michigan, Superior, Huron and Erie. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1973; Publ. 17; 108 pp.

Schelske, C.L. Role of Phosphorus in Great Lakes Eutrophication: Is There a Controversy? J. Fish. Research Board Canada; 1979; 36(3): 286-288.
The paper is devoted to the specific role of phosphorus in the Great Lakes and its effects on phytoplankton growth. The author states that phosphorus is limiting the growth of phytoplankton in the Upper Great Lakes and accelerating eutrophication in the lower lakes.

Schelske, C.L. Silica and Nitrate Depletion as Related to Rate of Eutrophication in Lakes Michigan, Huron and Superior. IN: A.D. Hasler, Editor. Coupling of Land and Water Systems. New York: Springer-Verlag; 1975; 10: pp. 277-298.

Schelske, C.L.; L.E. Feldt; M.A. Santiago and E.F. Stoermer. Nutrient Enrichment and Its Effects on Phytoplankton Production and Species Composition in Lake Superior. Proc. 15th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1972: pp. 149-165. In the study, nutrients were added to 1600 liter bags of lake water containing natural phytoplankton assemblages, replaced in Lake Superior (Whitefish Bay to Keweenaw Pensinsula), allowed to incubate for 10 days and cell counts measured. Conclusions were that phosphorus is limiting phytoplankton growth and productivity, and that supplies of phosphorus will at least partially, control eutrophication of Lake Superior.

Schelske, Claire L. Nutrient Inputs and Their Relationship to Accelerated Eutrophication in Lake Michigan. IN: E.J. Monke, Editor. Biological Effects in the Hydrbiological Cycle, Proc. 3rd Internat. Symp. for Hydrology Professors. West Lafayette, IN: Purdue Univ., Dept. of Agr. Eng.; 1974: pp. 59-81. The article is primarily concerned with eutrophication of Lake Michigan, but statistics on primary productivity, chlorophyll a, phosphorus and trophic state for Lake Superior are included for comparison.

Schelske, Claire L. Silica and Nitrate Depletion as Related to Eutrophication in Lake Michigan, Lake Huron, and Lake Superior. IN: Proc. Symp. Interactions Between Land and Water: Internat. Ass. Ecol. and Soc. Internat. Limnol.; 1972.

Schelske, Claire L. and Edward Callander. Survey of Phytoplankton Productivity and Nutrients in Lake Michigan and Lake Superior. Proc. 13th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1970; Part I: pp. 93-105. Primary productivity and soluble nutrient elements were measured on Lakes Michigan and Superior. Results indicate differences between surface and near bottom samples in calcite saturation and pH in both lakes. Twenty two stations were sampled in Lake Superior all along the south shore.

Schelske, Claire L.; Edward D. Rothman and Mila S. Simmons. Comparison of Bioassay Procedures for Growth-Limiting Nutrients in the Laurentian Great Lakes. Mitt. Internat. Verein. Limnol.; 1978; 21: 65-80. This study was a comparison of results from lab experiments with natural phytoplankton assemblages from Lakes Erie, Michigan, Huron and Superior. The purpose was to demonstrate that phosphorus is a growth-limiting nutrient in all the lakes except Erie.

Schertzer, W.M. Energy Budget and Monthly Evaporation Estimates for Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 320-330.
Thermal energy budget components and monthly evaporation estimates were computed for Lake Superior. Actual temperature data was used for computations. Other budget parameters were estimated partly from existing basin meteorological data and partly from imperical relationships.

Schertzer, W.M.; F.C. Elder and J.H. Jerome. Measurements of Vertical Extinction and Photic Depth in Lake Superior 1973 and Lake Huron and Georgian Bay 1974. Burlington, Ontario: Canadian Centre for Inland Waters; 1974; Unpub. Report.

Schertzer, W.M.; F.C. Elder and J.H. Jerome. Water Transparency of Lake Superior in 1973. J. Great Lakes Research; 1978; 4(3-4): 350-358.
Measurements of water transparency were made at monthly intervals from May to November in 1973. Spectrometer data, transmissometer and Secchi disc observations were used to compute mean vertical extinction coefficients and photic depth. Data show spatial and temporal variability in water transparency between areas. Photic zone depth in the deep midlake zones range from 20-30 meters. Reduced water transparency generally occurs along coastal areas near Duluth, Thunder Bay, Apostle Islands, Nipigon-Black Bay, Marathon, and Whitefish Bay. Photic depth in these areas are usually less than 20 meters.

Scherz, J.P.; M. Sydor and J.F. VanDomelen. Aircraft and Satellite Monitoring of Water Quality in Lake Superior Near Duluth. IN: Third Earth Resources Tech. Satellite Symp. Washington, DC; 1973; NASA SP-351; pp. 1619-1636. (Vol. 1; (Sec. B)).
Discussion centers around the use of satellite imagery and low altitude aerial photographs for use in water quality monitoring. Extensive lab analysis indicates that water reflectance, which causes brightness on aerial photos, positively correlates with the water quality parameter of turbidity.

Schorfhaar, R. Report on Michigan's 1975 Lake Superior Chub Fisheries. Minutes from Lake Superior Comm. meeting. Feb. 24, 1976 ed. Lansing, MI: Michigan Dept. of Natural Resources; 1976.

Schorfhaar, R. Status of the Whitefish and Chub Fisheries in Michigan's Waters of Lake Superior. Minutes from Lake Superior Comm. meeting. Lansing, MI: Michigan Dept. of Natural Resources; 1977.

Schumacher, R.E. and J.G. Hale. Third Generation Pink Salmon Oncorhynchus Gorbuscha (Walbaum), in Lake Superior. Trans. Amer. Fish. Soc.; 1962; 91: 421-422.

Schwab, David J.; John R. Bennett and Edward W. Lynn. "Pathfinder" A Trajectory Prediction System for the Great Lakes. Ann Arbor, MI: Great Lakes Env. Res. Lab; 1984; NOAA Tech. Memo ERL-GLERL-53; 37 pp.
This report describes a series of computer programs that can be used to simulate currents and particle trajectories on the Great Lakes when supplied with meteorological data and initial partical locations.

Sehraufnagel, F.H.; L.A. Montie; L.A. Leuschow and K. Glasshof. Report on an Investigation of the Pollution in Lake Superior Drainage Basins Made During 1965 an Early 1966: Wisconsin Comm. on Water Pollution; 1966; 32; pp.

Selgeby, J.H. Immature Insects (Plecoptera, Trichoptera and Ephemeroptera) Collected From Deep Water in Western Lake Superior. J. Fish. Research Board Canada; 1974; 31: 109-111.

Selgeby, J.H.; D.V. Swedberg and W.R. MacCallum. Predation by Rainbow Smelt (Osmerus Mordax) on Lake Herring (Coregonus Artedii) in Western Lake Superior. J. Fish. Research Board Canada; 1978; 35: 1457-1463.

Selgeby, S.H. Life Histories and Abundance of Crustacean Zooplankton in the Outlet of Lake Superior, 1971-72. J. Fish. Research Board Canada; 1975; 32: 461-570.

Shapiro, J. and G.E. Glass. Factors Limiting Algal Growth in Lake Superior. Proc. Biol. Conf. on Lake Superior. Superior, WI: Wisconsin State Univ.; 1970.

Shapiro, J. and G.E. Glass. Synergistic Effects of Phosphate and Manganese on Growth of Lake Superior Algae. Verh. Intern. Ver. Limnol.; 1975; 19(1): 395-404.
Research into the effects of taconite tailings on the Lake Superior native algae indicate that the wastes do stimulate the growth of the algae. The stimulatory agent in the tailings is thought to be manganese which is normally limiting. Manganese makes the lake much more responsive to phosphate entering from other sources.

Shear, H. Lake Superior in the 21st Century. J. Great Lakes Research; 1978; 4(3-4): 550-553.
Projections of population, industrial growth, phosphorus inputs, changes in land use patterns and waste disposal are given. Phosphorus loadings to the lake from point sources are projected to increase only slightly by the year 2020.

Shuter, V.; K. Stortz; G. Oman and M. Sydor. Turbidity Dispersion in Lake Superior Through Use of LANDSAT Data. J. Great Lakes Research; 1978; 4(3-4): 359-360.
Consecutive Landsat images of a red clay turbidity plume due to runoff from Nemadji River, Wisconsin, are used in computation of the horizontal eddy diffusivity for Lake Superior.

Simons, T.J. Development of Three-Dimensional Numerical Models of the Great Lakes. Burlington, Ontario: Canadian Centre for Inland Waters; 1973; Scientific Series No. 12.

Sloss, P.W. and J.H. Taylor. Large Scale Current Measurements in Lake Superior. Ann Arbor, MI: Great Lakes Env. Res. Div.; 1976; Contribution 61.
Current meter data was collected in Lake Superior in 1967 and 1973. Analysis of these data show a general counterclockwise current over most of the lake. Currents nearshore are strong and open lake currents show strong periodic motions. A periodicity is seen in the currents between Isle Royale and the North Shore and persistent flow patterns are evident along the Keweenaw Peninsula.

Sly, P.G. and R.L. Thomas. Review of Geological Research as it Relates to an Understanding of Great Lakes Limnology. J. Fish. Research Board Canada; 1974; 31: 795-825.

Smith, B.R.; J.J. Tibbles and B.G.H. Johnson. Control of the Sea Lamprey (Petromyzon Marinus) in Lake Superior, 1953-1970. Marquette, MI: Fish and Wildlife Service; 1974; Great Lakes Fish. Comm. Tech. Report 26.
Discussion focuses on the method of entry of lamprey into the great lakes, control and levelof success over the years.

Smith, Bernard R. Spring and Summer Temperature of Streams Tributary to the South Shore of Lake Superior, 1950-60: US Fish and Wildlife Service; 1962; Special Scientific Report 410.

Smith, L.L. and J.B. Moyle. A Biological Survey and Fishery Management Plan for Streams of Lake Superior North Shore Watershed: Minnesota Dept. of Conservation; 1944; Tech. Bull. 1.

Smith, Ned P. and Robert A. Ragotzkie. A Comparison of Computed and Measured Currents in Lake Superior. Proc. 13th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1970; Part II: pp. 969-977. Currents and temperature were measured along three tracks out from the north shore of the Keweenaw peninsula in 1969. Measured currents were spatially more variable horizontally and vertical and measured currents generally were stronger than computed currents.

Smith, Ned P. A Note on Spring Warming in Lake Superior. Water Resources Bulletin; 1974; 10(5): 990-994. Temperature recorder data from central Lake Superior obtained from May through July 1967 were used to describe the spring warming of the deep waters of the lake. Data was collected at 30, 90 and 150 meters.

Smith, Ned P. and Robert A. Ragotzkie. Some Characteristics of Temperature Recorder Time Series from Lake Superior. Proc. 14th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1971: pp. 670-676. Half hour temperature data collected at five levels in south eastern Lake Superior from early June to mid October 1967 were used to compute daily average, standard deviation, daily temperature ranges and relative energy density.

Smith, Ned P. Summertime Temperature and Circulation Patterns in Lake Superior. Ann Arbor, MI: Univ. of Michigan Microfilms; 1972; 205 pp.

Smith, Ned P. Temporal Variations of Lakeshore Inertial Motion in Lake Superior. Proc. 15th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1972: pp. 673-679. Lake Superior data was collected at two nearshore stations, north of the Keweenaw Peninsula. Harmonic analysis was used to determine day to day variations in inertial motion. Inertial motion was poorly developed until late July when the thermocline formed and thereafter constant generation and decay of inertial motion was observed at 10 meters.

Smith, Peter A. and J.R. Moore. The Distribution of Trace Metals in the Surficial Sediments Surrounding Keweenaw Point, Upper Michigan. Proc. 15th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1972: pp. 383-393.
Determinations of trace metals based on 54 atomic absorption analysis of surficial sediments around the Keweenaw Peninsula are presented. Results show an enhanced concentration of trace metals to the north of the Keweenaw which has been attributed to the geology.

Smith, S.I. Preliminary Report on the Dredging on Lake Superior. Detroit, MI: US Lake Survey; 1871; Sec. of War Report for 1871, VII.

Smith, S.I. Sketch of the Invertebrate Fauna of Lake Superior: US Fish. Comm.; 1874; Annual Report.

Smith, Stanford H. Factors of Ecologic Succession in Oligotrophic Fish Communities of the Laurentian Great Lakes. J. Fish. Research Board Canada; 1972; 29: 717-730.

Smith, Stanford H. Limnological Surveys of the Great Lakes--Early and Recent. Trans. Amer. Fish. Soc.; 1957; 86: 409-418.

Smith, Stanford H. Species Succession and Fishery Exploitation in the Great Lakes. J. Fish. Research Board Canada; 1968; 25: 667-693.

Snyder, F.F. Evaporation on the Great Lakes. Helsinki, Finland: Internat. Ass. of Science: Hydrology, General Assembly; 1960; Publ. No. 53.

Sonnen, C.A. and P.M. Jacobson. Estimates of Economic Activity in Regions of the Canadian Great Lakes Basin for the Period 1972-2020. Burlington, Ontario: Inland Waters Directorate, Env. Canada; 1975; Vol. I and II(Series A and B).

Sonzogni, W.C. and W.R. Swain. Perspectives on US Great Lakes Chemical Toxic Substances Research. J. Great Lakes Research; 1980; 6(4): 265-274.
The article discusses the susceptibility of the Great Lakes to chemical contamination and the major gaps in knowledge that exist on the critical transport pathways, fate, and ecological effects of toxic substances.

Sonzogni, W.C. Weather and Water Quality. Great Lakes Communicator; 1976; 7(4): 5-6.

Sonzogni, W.C.; A. Robertson and A.M. Beeton. Great Lakes Management: Ecological Factors. Env. Management; 1983; 7: 531-541.
Historical perspectives on ecological factors such as invasion by foreign species, habitat changes, overfishing, and changes in organism populations. Paper stresses ecosystem management approaches for more cost effective management. No specific emphasis on Lake Superior.

Sonzogni, W.C.; T.J. Monteith; W.N. Bach and V.H. Hughes. United States Great Lakes Tributary Loadings-Study on Great Lakes Pollution From Land Use Activities. Windsor, Ontario: International Joint Commission; IJC Tech. Report.

Sonzogni, W.C.; W. Richardson; P. Rogers and T.J. Monteith. Chloride Pollution of the Great Lakes. J. Water Pollution Control Federation; 1983; 55: 513-521.
The paper summarizes the current estimates of chloride inputs to the Great Lakes from various sources. Future chloride levels are projected from mathematical models. Management implications of current and future chloride inputs to the lakes are discussed. Major emphasis is on Lake Michigan.

Spain, J.D. and D.W. Hubbard. Mixing of Water Masses in Lacustrine Systems. IN: 38th Annual Meeting Amer. Soc. Limnol. Oceanogr. Halifax, Nova Scotia.

Spain, J.D.; G.M. Wernert and D.W. Hubbard. The Structure of the Spring Thermal Bar in Lake Superior. J. Great Lakes Res.; 1976; 2(2): 296-306.
Temperature distribution and distribution of naturally fluorescent material were measured along the Keweenaw Peninsula in 1974 and 1975. Objectives were to determine the nature of energy and mass transport in the thermal bar zone. Computer generated temperature distributions provide a detailed picture of the thermal bar. Data show a strong correlation between natural fluorescence and temperature. Authors concluded that little mixing occurs between inshore and offshore waters across the thermal bar.

Staats, David. Acid Rain, Nothing to Sing In. Great Lakes Communicator; 1979; 10(3): 1-8.
Article summarizes the effects of acid precipitation on the terrestrial and aquatic ecosystems of the Great Lakes Basin. Included are summaries of: damages caused by acidity, need for emmissions standards, long range transport of sulfur emmissions, acid precipitation research, political aspects of the acid rain problem and a case study on the effects of acid rain on the ecosystem of Isle Royale.

Stalling, D.L.; R.J. Norstrom; L.M. Smith and M. Simon. Patterns of PCDD, PCDF, and PCB Contamination in Great Lakes Fish and Birds and Their Characterization by Principle Components Analysis. Chemosphere; 1985; 14(6/7): 627-643.
Concerns about harmful residues of PCDD, PCDF and PCB's in fish and birds consumed by humans prompted this study. Concentrations of TCDD in fish and birds were found to be highest in regions where chlorinated organic chemicals are manufactured or near hazardous waste sites. Ratios of PCDF to PCDD in the bird eggs examined were smaller than those observed in fish, suggesting that in birds the rate of metabolism of PCDF is higher than that of PCDD.

Stevenson, J.C. The Smelt Situation in the Upper Great Lakes. Canadian Field Naturalist; 1944; 58(4): 128-129.

Stevenson, R. and E.F. Stoermer. Diatoms from the Great Lakes. Some Rare or Poorly Known Species of the Genus Navicula. J. Great Lakes Research; 1978; 4(2): 178-185.
Twenty one taxon of diatom genus navicula known to occur in the Great Lakes are described and photographs included in the paper. Great Lakes distribution and ecological habitat of each are discussed.

Stoermer, E.F. and J.J. Yang. Contribution to the Diatom Flora of the Laurentian Great Lakes. I. New and Little Known Species of Amphora (Bacillariophyta Pennatibacillariophyceae). Phycologia; 1971; 10(4): 397-409.
Biomass, community structure, and photosynthetic activity of epilithic periphyton of the north shore of Lake Superior were investigated in 1966-1968. Samples were taken down to 40 feet. Authors suggest that periphyton will provide a baseline for estimating the advance of eutrophication in Lake Superior.

Stoermer, E.F. and R.G. Kreis, Jr. Preliminary Checklist of Diatoms (Bacillariophyta) From the Laurentian Great Lakes. J. Great Lakes Research; 1978; 4(2): 149-169.

Stoermer, E.F.; M.M. Bowman; J.C. Kingston and A.L. Schaedel. Phytoplankton Composition and Abundance During the International Field Year For the Great Lakes. Ann Arbor, MI: Univ. of Michigan, Great Lakes Res. Div.; 1974; Special Report 53; 373 pp.

Stoermer, Eugene F. Characteristics of Benthic Algal Communities in the Upper Great Lakes. Duluth, MN: EPA, Env. Research Lab; 1980; EPA-600/3-80-073; 73 pp. Study focused on characterizing benthic algal communities in areas ranging from oligotrophic to eutrophic situations. Evidence indicates that the range of many oligotrohic species which originally occupied the upper Great Lakes have been severely restricted. These populations are thought to be very good indicator species for adverse changes in water quality. The recent introduction of species not characteristic of oligotrophic systems indicate continuing degradation of the upper Great Lakes.

The report contains a summary of benthic diatom population distributions in the upper Great Lakes by lake, indicates the species primary habitat, secondary habitat and depth range. Also included are photographs of many of the algal species from the lakes.

Stoermer, Eugene F. Comparison of Benthic Diatom Communities in Lake Michigan and Lake Superior. Verh. Intern. Vere. Limnol.; 1975; 19(11): 932-938. Results based on a limited number of samples indicate that diversity and richness of benthic diatoms increase as sampling proceeds northward from Lake Michigan to Lake Superior. Diatoms wre sampled at varying depths in the lakes to determine whether anthropogenic disturbance affect their diversity and abundance. All species identified in Lake Michigan were also present in Lake Superior, but the reverse was not true.

Stoermer, Eugene F. Diatoms From the Great Lakes. I. Rare or Poorly Known Species of the Genera Diploneis, Oestrupia and Stauroneis. J. Great Lakes Research; 1978; 4(2): 170-177. Known distribution and ecological habitat of eleven taxa are described and photographs included of each.

Stoermer, Eugene F. The Effects of Energy Related Effluents on Phytoplankton Communities. Proc. 2nd Federal Conf. on the Great Lakes: Interagency Committee on Marine Science and Eng.; 1975; pp. 409-422. Provides a brief review of literature treating primary producer communities in each of the Great Lakes. A reference section and a list of characteristic diatom species, predominant microflagellates and algal species are also included.

Stoermer, Eugene F. Phytoplankton Assemblages as Indicators of Water Quality in the Laurentian Great Lakes. Trans. Amer. Micros. Soc.; 1978; 97(2): 1-16.

Stokes, Lee W.; Theodore A. Olson and Theron O. Odlaug. Studies of Chlorophyll and Carotenoid Pigments in Lake Superior Periphyton. Proc. 10th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1967: pp. 107-114.
Sampling of periphyton was conducted in 1966 on Stony Point Bay. Pigment analysis by semimicro spectrophotometry for chlorophyll a and b, and non-astacin carotenoids, were correlated with other productivity parameters to demonstrate the magnitude of standing crop and provide baseline data for future monitoring. Data indicate that increased amounts of pigment per organism would not necessarily lead to increased photosynthetic activity given conditions of excess light.

Stortz, K. and M. Sydor. Remote Sensing of Lake Superior. IN: Proc. Internat. Symp. on Remote Sensing of the Env. Ann Arbor, MI: Univ. of Michigan, Publ. Center for Remote Sensing of the Env.; 1974. (2:; (933-937).

Stortz, K.R. and M. Sydor. Transports in the Duluth-Superior Harbor. J. Great Lakes Res.; 1980; 6(3): 223-231.
A hydrodynamic and water quality model for Duluth-Superior Harbor were developed and verified by using data on currents, water levels and water quality. The water quality model is used to simulate the transport of particulates resuspended by ship traffic and dispersal of dissolved material spilled in the harbor.

Stortz, K.; R. Clapper and M. Sydor. Turbidity Sources in Lake Superior. J. Great Lakes Research; 1976; 2(2): 393-401.
Landsat data and measurements of turbidity profiles with depth, suspended solids, and particle sizes were used in analysis of red clay turbidity plumes in western Lake Superior for a variety of wind conditions. Results show that between May and November, 70% of total suspended load in the lake is due to shore erosion.

Stottlemyer, J. Robert. Variation in Ecosystem Sensitivity and Response to Anthropogenic Atmospheric Inputs, Upper Great Lakes Region. IN: Inter. Symp. on Hydrometeorology; 1982.

Strachan, W.M.J. Chloroform-extractable Organic Compounds in the International Great Lakes. IN: L.H. Keith, Editor. Identification and Analysis of Organic Pollutants in Water. Ann Arbor, MI: Ann Arbor Science; 1976; (Chaper 28): pp. 479-497.

Strachan, W.M.J. and G.E. Glass. Organochlorine Substances in Lake Superior. J. Great Lakes Res.; 1978; 4(3-4): 389-397.
Published and governmental reports on Lake Superior are examined for accounts of the presence of organic contaminants, and other material in environmental samples of water, sediments and fish. PCB's, DDT residues, and dieldrin were most often examined or observed.

Strachan, W.M.J. and H. Huneault. Polychlorinated Biphenyls and Organochlorine Pesticides in Great Lakes Precipitation. J. Great Lakes Research; 1979; 5: 61-68.

Strachan, W.J. A Statistical Examination of Great Lakes Chemical Monitor Data at the Canada Centre for Inland Waters. IN: Proc. 16th Conf. Great Lakes Res.: Ann Arbor, MI; Internat. Ass. Great Lakes Res.: pp. 949-957.

Struger, J.; D.V. Weselok; P. Mineau and D.J. Hallett. Levels and Trends of Organochlorines in Herring Gulls in the Great Lakes, 1974-1981. Proc. 26th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1983.

Struger, J.; D.V. Weseloh and J. Elliot. Levels of Heavy Metals in Herring Gulls in the Great Lakes, 1983. In: Proc. 28th Conf. Great Lakes Res.-Program and Abstracts; June 3-5, 1985; Univ. of Wis-Milwaukee: Internat. Ass. Great Lakes Res.; 1985.
Levels of twenty-seven metals found in bone, feather, liver and kidney of pre-fledged and adult Herring Gulls are reported for one colony from each of Lakes Superior, Huron, Erie and Ontario, in 1983. Pooled mean levels of metals were consitently higher in adults from Lake Ontario, followed by Superior, Erie and Huron.

Sundaram, T.R. and R.G. Relm. The Seasonal Thermal Structure of Deep Temperate Lakes. Tellus 25; 1973.

Swain, F.M. and N. Prokopovich. Stratigraphy of Upper Part of Sediments of Silver Bay Area, Lake Superior. Geol. Soc. America Bull.; 1957; 68: 527-542.

Swain, W.R.; F.C. Elder; H. Huneault and W.M.J. Schertzer. PCB's and Organochlorine Pesticides in Great Lakes Precipitation. Proc. 20th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1977.

Swain, W.R.; R.M. Wilson; R.P. Neri and G.S. Porter. Evaluation of the Effects of a Harbor Bubbler System for Winter Navigation on the Water Quality of Howard's Bay in the Duluth-Superior Harbor-Winter 1974-75. St. Paul, MN: US Army Corp. of Eng.; 1975; Final Report; pp. 1-66.

Swain, W.R.; R.M. Wilson; R.P. Neri and G.S. Porter. Persistent Organic and Heavy Metal Residues in the Near-Shore Fishery of Western Lake Superior. Grosse Ile, MI: Environmental Protection Agency; 1976; Final Report; pp. 1-171.

Swain, W.R.; R.M. Wilson; R.P. Neri and G.S. Porter. Persistent Organic and Heavy Metal Residues in Lake Superior Fish: EPA, Office of Research and Development; 1978; Ecological Research Series.
One hundred and thirteen sample sites were located around the shores of Lake Superior at tributary streams, mouths of harbors, sites adjacent to industrial concentration, and the points near population centers. From these points, several species of indicator fish were collected. These fish were analyzed for heavy metals, persistent organic compounds and radioactivity.

Swain, W.R.; R.W. Magnuson; J.D. Johnson; T.A. Olson and T.O. Odlaug. Vertical Migration of Zooplankton in Western Lake Superior. Proc. 13th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1970; Part I: pp. 619-639.
During the years 1967-1969, samples in western Lake Superior were taken from 1-40 meters to determine the vertical distribution of principle zooplankton. Seasonal, diurnal and annual variations in density distribution are discussed. A review of the literature on early zooplankton research (not Lake Superior specifically) is provided in the paper.

Swain, Wayland R. Chlorinated Organic Residues in Fish, Water and Precipitation from the Vicinity of Isle Royale, Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 398-407.
Studies of persistent organic contaminants indicated increased levels of organic contamination in the flesh of fish taken from the vicinity of Isle Royale. Significant increases in levels of organic residues in Lake Superior fish were observed in lean Lake Trout, and fat Lake Trout. Findings led to a preliminary study of the transport of polychlorinated biphenyl compounds in atmospheric precipitation.

Siskiwit Lake on Isle Royale was selected as a control site for studies on Lake Superior. However, values for several organic residues in the flesh of

fish from Siskiwit Lake were significantly higher than fish from Lake Superior.

Swain, Wayland R. Eutrophication of Lake Superior. IN: Limresta, Bulletin of Lake Superior Limnological Research Station. Duluth, MN; 1971; Research Report No. 3.

Swain, Wayland R.; R.M. Wilson and R.P. Neri. Studies on the Effects of Thermal Additions on Selected Zooplankton Populations. St. Paul, MN: Water Resources Research Center; 1975; Bull. No. 84; 85 pp.
Objectives of the study were to examine the effects of calefaction on members of the faunal portion of the Lake Superior ecosystem in a controlled laboratory situation. Also, some species which are widely available were utilized in order to establish a point of reference which could be used by workers in other parts of the country.

Swanson, B.L. and D.V. Swedberg. Decline and Recovery of the Lake Superior Gull Island Reef Lake Trout Population and the Role of Sea Lamprey Predation. Canadian J. Fish. and Aquatic Science; 1980; 37: 2074-2080.

Swedberg, Donald V. and James W. Peck. Food of Young of the Year Lake Trout (Salvelinus Namaycush) in Presque Isle Harbor, Lake Superior. J. Great Lakes Research; 1984; 10(3): 280-285.
Digestive tracts of 293 Lake Trout were examined. Trout in the 25-27 mm length size class started to eat organisms before all their yolk material was absorbed. Trout in Presque Ile Harbor fed heavily on plankton.

Swenson, W.A. and M.L. Matson. Influence of Turbidity on Survival, Growth, and Distribution of Larval Lake Herring (Coregonus Artedii). Trans. Amer. Fish. Soc.; 1976; 4: 541-545.
Herring larvae were held for 9 days at varying turbidity levels simulating those found in Lake Superior to determine the influence of red-clay turbidity on survival, growth, and distribution of the larvae.

Swenson, William A. Influence of Turbidity on Fish Abundance in Western Lake Superior. Superior, WI: Univ. of Wisconsin; 1978; 92 pp.
Project was designed to improve the understanding of the influence of red clay turbidity on fish populations. Field and lab studies focused on behavioral responses of fish and changes in fish interrelationships. Zooplankton distribution and abundance were also examined.

Sydor, M. and K.R. Stortz. Sources and Transports of Coal in the Duluth-Superior Harbor. Duluth, MN: EPA, Environmental Research Lab; 1980.

Sydor, M. and K. Stortz. Sources and Transports of Coal in Duluth-Superior Harbor. Duluth, MN: Univ. of Minnesota, Dept. of Physics; 1980.

Sydor, Michael. Effects of Runoff on Water Quality in Lake Superior. Duluth, MN: Univ. of Minnesota, Dept of Physics; 1976; Final Report, EPA Grant R-005175-01.

Sydor, Michael. Effects of Namadji Runoff on Lake Superior. Duluth, MN: Univ. of Minnesota; 1977; Final Report, EPA Grant R-005286-01.

Sydor, Michael, and Gordon J. Oman. Effects of Nemadji River Runoff on Lake Superior: Effects of River Inputs on the Great Lakes; 1977; Unpub. Report submitted to EPA and PLUARG Task Group D; 193 pp.
Investigation determined the extent of contaminants entering the lake from spring runoff, resuspension of contaminants, effluent budgets, effluent identification through Landsat, chemical loadings from spring runoff, long range effluent transport and accumulation, and effluent dissipation to background levels.

Sydor, Michael. Red Clay Turbidity and Its Transport in Western Lake Superior. Duluth, MN: Univ. of Minnesota; 1975; Final Report, EPA Grant R-05175-01.

Sydor, Michael. Remote Sensing in Lake Superior Studies. IN: A Study of Minnesota Forests and Lakes Using Data From Earth Resources Tech. Satellites. Minneapolis, MN: Univ. of Minnesota, Space Science Center; 1974; 24 Month Progress Report; pp. 197-240.
Correlation of ERTS data with measurements of turbidity and transmittance for water in the Duluth-Superior Harbor and adjacent Lake Superior water was used in production of turbidity maps for the extreme western arm of Lake Superior.

Sydor, Michael. Remote Sensing of Particulate Concentrations in Water. Applied Optics; 1980; 19: 2794-2800.
Landsat 2 digital data of Lake Superior was used to indicate general information on atmospheric scattering, water clarity, and optical properties of suspended solids. From these data concentrations of particulates within +/- 0.5 mg/l can be determined.

Sydor, Michael; K.R. Stortz and W.R. Swain. Identification of Contaminants in Lake Superior Through Landsat I Data. J. Great Lakes Research; 1978; 4(2): 142; ISSN 148.
Landsat signal intensities and signal ratios are used to identify four types of particulate contaminants in Lake Superior: red clay, tannin, taconite tailings and river particulates.

Sydor, Michael; Richard T. Clapper; Gordon J. Oman and Kirby R. Stortz. Red Clay Turbidity and Its Transport in Lake Superior. Duluth, MN: Univ. of Minnesota; 1979; Final Report to EPA.
Landsat satellite imagery is used in determining the magnitude of red clay plumes in western Lake Superior from erosion of the Wisconsin shoreline, resuspension of bottom sediments and runoff from streams. A model for water transports as a function of wind was also developed.

Taylor, W.D.; S.D. Hern; L.R. Williams; V.W. Lambou; M.K. Morris and F.A. Morris. Phytoplankton Water Quality Relationships in US Lakes. IN: Part VI: The Common Phytoplankton Genera From Eastern and Southeastern Lakes. Las Vegas, Nevada: Environmental Protection Agency; 1979; Ecol. Series; 82 pp.

Taylor, Wm. Randolph. Phytoplankton of Isle Royale. Trans. Micros. Soc.; 1935; 54: 83-97.
Phytoplankton from a small number of samples were examined from a station one quarter mile offshore. The most abundant plankton were Dinobryan. Also identified were Botrycoccus, Asterionella, and Rhizosolenia.

Thayer, V.L. Diatoms in Lake Superior Sediments: Distribution, Stratigraphy and Taxonomy. Minneapolis, MN: Univ. of Minnesota; 1981; cMS Dissertation.

Thayer, V.L.; T.C. Johnson and H.J. Schrader. Distribution of Diatoms in Lake Superior Sediments. J. Great Lakes Research; 1983; 9(4): 497-507.
Relatively high diatom concentrations were found in the upper 50 cm of sediment in Thunder Bay, Thunder Bay trough, Keweenaw Bay and the North Shore trough. Diatom abundance increased with increasing sedimentation rates and proximity to shore.

Thayer, Valerie L.; Thomas C. Johnson and Hans J. Schrader. A Preliminary Study of Recent Diatom Assemblages in Lake Superior Sediment. J. Great Lakes Research; 1983; 9(4): 508-516.
Four cores taken from Lake Superior showed few changes in relative diatom abundance among cores. However, a consistent increase in Melosira Islandica in the upper 20 cm was evident in all four cores. The increase may

be attributed to gradual climatic cooling over the past few thousand years or differential dissolution.

Thomas, J.F.J. and R.M. Gale. The Upper Great Lakes Drainage Basin in Canada, 1957-1963. Water Survey Report No. 14: Dept. of Mines and Tech. Surveys; 1965.

Thomas, M.L.H. Benthos of Lake Superior Bays. Canadian Field Nat.; 1966; 80(4): 200-212.

Thomas, N.A.; K. Hartwell and W. Miller. Great Lakes Nutrient Assessment. IN: Proc. Biostimulation and Nutrient Assessment Workshop. Corvallis, Oregon: Environmental Protection Agency; 1975; Ecol. Res. Series.

Thomas, R.L. The Distribution and Transport of Mercury in Sediments of the Laurentian Great Lakes System. IN: Proc. Internat. Conf. on Transport of Persistent Chemicals in Aquatic Ecosystems. Ottawa, Ontario; 1974; pp. 1-16.

Thomas, R.L. and C.I. Dell. Sediments of Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 264-275.
In 1973, 406 samples were taken from the upper 3 centimeters of sediment of the Lake Superior floor. Results of sample analysis from organic and inorganic carbon, grain size, pH, etc. and echo sounding records provide a description of surface sediment distribution.

Thomas, R.L. and J.M. Jaquet. The Surficial Sediments of Lake Superior. IN: Proc. IXth Internat. Cong. Sedimentol. Nice, France.

Thompson, M.R. Procedure for Examination of Water and Sediment Samples for Total Asbestos Fibre Count by Electron Microscopy. Burlington, Ontario: Canadian Centre for Inland Waters; 1976; Inland Waters Directorate Tech. Bull. No. 94; 4 pp.
This report documents the procedures for obtaining total fibers per litre of asbestos in water samples.

Thompson, Mary E. Major Ion Loading to Lake Superior. J. Great Lakes Research; 1978; 4(3-4): 361-369.
A method of predicting tributary loadings of major ions to Lake Superior is described. Predictions are based on water budget and chemical composition of Lake Superior, and data on the chemistry of atmospheric precipitation on and around the lake. Predictions confirm the fact that chemical weathering in the basin is the primary source of calcium, magnesium, and bicarbonate ions to the lake; the atmosphere is the major source of sulfate and chloride in the lake and its basin. Predicted loadings and river chemistry loadings indicate an excess loading, mainly atmospheric

in origin, of chloride and sulfate, but because the lake volume is so great, increases in concentrations of these ions in the open waters of the lake will not be detectable for several decades.

Thomson, K.P.B. and J.Jerome. Transmissometer Measurements of the Great Lakes. Burlington, Ontario: Canadian Centre for Inland Waters; 1973; Scientific Series No. 53.

Thomson, K.P.B.; J.Jerome and W.R. McNeil. Optical Properties of the Great Lakes. Proc. 17th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1974; Part II: pp. 811-822.
During the International Field Year for the Great Lakes, a series of in-situ optical measurements were made on Lakes Ontario, Erie and Superior. Principle optical measurements were downwelling irradiance of sunlight from 400-700 nm, as a function of depth. Analysis and comparison of data is based on Vollenweider's statistical mode of the extinction coefficient. Lake Superior spectral transmittance curves are similar to those for Lake Ontario and Erie. Lake Superior had a very high transmittance value at shorter wavelengths compared to the other lakes.

Toczydlowski, David G. Aquatic Baseline on Isle Royale, Michigan. Houghton, MI: Michigan Tech. Univ.; 1981; Unpub. Masters Thesis.
Study provides baseline data on basic limnological parameters in several inland lakes on Isle Royale and Chippewa Harbor in Lake Superior. Relative abundances of aquatic insects, macrophytes and phytoplankton were estimated. Primary water chemistry parameters were determined as well as major nutrients and secchi disk depth.

Upchurch, Sam B. Natural Weathering and Chemical Loads in the Great Lakes. Proc. 15th Conf. Great Lakes Res. Ann Arbor, MI: Internat. Ass. Great Lakes Res.; 1972: pp. 401-415.
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